



**STATEMENT OF JOHN E. HIDLE, P.E.  
IN SUPPORT OF AN  
APPLICATION TO AMEND A PENDING  
APPLICATION FOR CONSTRUCTION PERMIT  
BPCDT-19991101ACJ  
WUTV-DT - BUFFALO, NEW YORK  
DTV - CH. 14 - 1000.0 kW - 299.5 m HAAT**

Prepared for: WUTV Licensee, LLC

I am a Consulting Engineer, an employee in the firm of Carl T. Jones Corporation, with offices located in Springfield, Virginia. My education and experience are a matter of record with the Federal Communications Commission. I am a registered Professional Engineer in the Commonwealth of Virginia, Registration No. 7418, and in the State of New York, Registration No. 63418.

**GENERAL**

This office has been authorized by WUTV Licensee, LLC, licensee of WUTV, channel 29, Buffalo, New York, and applicant for construction permit of paired DTV allotment WUTV-DT, channel 14, Buffalo, New York, to respond to a question raised by FCC staff regarding WUTV-DT's pending DTV application, to prepare this statement as part of the applicant's response to staff's question, and to prepare FCC Form 301, Sections III and III-D, and associated exhibits in support of an application to further amend the pending application for construction permit, BPCDT-19991101ACJ.

**DISCUSSION**

WUTV-DT's allotted digital facility was created and defined in the DTV Table of

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Allotments, Appendix B in the *Sixth Report and Order*<sup>1</sup> adopted April 3, 1997. WUTV, channel 29, Buffalo New York, was allotted a digital broadcast facility on channel 14 with an ERP of 50.0 kW at an antenna HAAT of 280.0 meters, resulting in a baseline DTV service population of 1,323,000 persons. Since it was intended that the allotted facility should replicate the service area of the analog station's licensed facility, the allotment is also based on the use of a replication directional antenna azimuth pattern. WUTV-DT's allotted DTV facility was based on its licensed analog facility as of April 3, 1997 (BLCT-2046) and has not changed since its creation. WUTV's analog facility was relocated and licensed in 1999 (BLCT-19990604KJ), however that change did not affect WUTV-DT's allotment facility. In October 1999 a maximization application for WUTV-DT was prepared by News Corp. (FOX) and tendered for filing before the November 1, 1999 deadline. The required environmental considerations study and report was prepared by this firm.

In May 2001 the applicant was informed by the FCC that the application could not be granted because it failed to adequately protect two Canadian DTV allotments. We evaluated the FCC's letter, and noted that interference prediction based on the contour overlap method showed a definite increase in contour overlap when compared to WUTV-DT's allotment facility. However, when we used a version of the longley-rice propagation methodology, as permitted by agreement in the *Letter of Understanding*<sup>2</sup> between the

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<sup>1</sup> See *Sixth Report and Order*, MM Docket No. 87-268, 12 FCC Rcd 14588 (1997).

<sup>2</sup> See *Letter of Understanding between the Federal Communications Commission of the United States of America and Industry Canada related to the use of the 54-72 MHz, 76-88 MHz, 174-216 MHz and 470-806 MHz bands for the digital television broadcasting service along the common border*. Effective on September 22, 2000, upon signature by both parties.

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Federal Communications Commission and Industry Canada, we determined that WUTV-DT's pending maximization application did not cause any increase in predicted interference to either Canadian DTV station. These findings were conveyed to the FCC in July 2001 in response to the May 2001 letter.

In October 2003 the applicant completed construction of a temporary DTV facility for WUTV-DT, according to the policies and parameters set forth in a *Reconsideration Order*<sup>3</sup>. The applicant's request for Special Temporary Authorization (STA) was granted on October 30, 2003, and WUTV-DT commenced DTV broadcasting on its allotted channel 14 with an Effective Radiated Power (ERP) of 35.0 kilowatts at an antenna centerline Height Above Average Terrain (HAAT) of 300.5 meters. The applicant continued pursuit of its pending maximization application.

Eventually it was learned that Industry Canada relies on its own computer program implementation of the longley-rice propagation model, and does not accept results from the FCC's implementation in tv\_process. It appears that Industry Canada also calculates predicted interference to only one station at a time assuming no other contributing stations are operational. Such a procedure eliminates any masking effect of other contributors to the overall interference landscape. The FCC's tv\_process program compares predicted interference assuming all DTV stations and NTSC stations are simultaneously operational, and the effect of the proposed maximization facility is compared to the effect of its own allotment.

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<sup>3</sup> See *Memorandum Opinion and Order on Reconsideration*, 16 FCC Rcd 28 at 20594 (2001)

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**DECISION**

The applicant thereupon abandoned the use of the longley-rice methodology and decided to amend its pending application in order to achieve Canadian concurrence by reducing the predicted contour overlap to the two Canadian DTV allotments. In March 2004 an amendment was tendered proposing for WUTV-DT a DTV facility with an Effective Radiated Power (ERP) of 1000 kW, an antenna centerline Height Above Average Terrain (HAAT) of 311.5 meters using a model TFU-16DSB-E (C) directional antenna, with 1.0 degree of electrical beam tilt, and with its horizontal azimuth pattern main lobe oriented toward 155 degrees True. In that amendment the altered horizontal directional azimuth pattern was shown to reduce the predicted contour overlap with each of the two Canadian stations to less than that predicted to be caused by WUTV-DT's allotment facility. We later learned that Industry Canada had, in September 2004, determined the amendment to be acceptable and so notified the FCC.

**OCTOBER 2004 FCC LETTER RECEIVED**

A letter dated October 26, 2004 received from the FCC stated that, based on the results of the Commission's technical review, the WUTV-DT maximization application for construction permit, as amended in March 2004, "...cannot be granted because it would cause interference to an authorized broadcast facility." The letter further states: "... Specifically, a grant of your proposal would cause a reduction in the population that would receive service within the authorized coverage area of a construction permit (BPCT-

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870331LW), for a new NTSC station located in Bath, NY. Your proposal would caused (sic) 5.5 percent interference utilizing a 2 km cell."

The October 26, 2004 letter based its inability to grant the WUTV-DT maximization application on the policies set forth in the *Public Notice, Additional Application Processing Guidelines for Digital Television (DTV)*, released August 10, 1998 ("Processing Guidelines Notice"). The Processing Guidelines Notice defines the technical and interference studies that must be performed to determine whether a proposal will comply with the 2 percent and 10 percent *de minimis* standards contained in Section 73.623(c)(2) of the Commission's Rules, which was established by the *Memorandum Opinion and Order on Reconsideration of the Sixth Report and Order in MM Docket No. 87-268*, 13 FCC Rcd 7418 (1998).

**RESULTS OF ANALYSIS**

The Commission's tv\_process software was utilized to evaluate the March 2004 WUTV-DT proposal. In order to confirm the Commission's findings set forth in the October 26<sup>th</sup> letter, We analyzed the "raw data" from the tv\_process study relative to the Bath, New York NTSC construction permit facility (BPCT-870331LW). These results are provided in Attachment A. The Bath, New York NTSC construction permit facility is third in the list of "Stations Potentially Affected by Proposed Station" shown in the tv\_process analysis results file. The analysis of the current record, beginning on page 4 of Attachment A, contains one scenario showing two licensed NTSC stations and the allotted facilities of WUTV-DT, which potentially affect the Bath CP. The "before analysis" and "after analysis" results which compare the predicted effects of WUTV-DT's allotment facilities with the predicted effects

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of WUTV-DT's pending application facilities show an increase of **5.5 percent** service lost as a result of WUTV-DT's pending application.

These data confirm that the Commission's analysis is correct as it relates to the Bath, New York construction permit facilities; therefore, in order to comply with Section 73.623(c)(2) of the Commission's Rules, an amendment seeking to modify WUTV-DT's pending application was prepared and submitted in October 2004. The October 2004 amendment proposed the use of antenna beam tilt in excess of one degree, as permitted in Section 73.622(f)(4) of the Commission's rules, to reduce, to less than 2%, the predicted interference to the Bath, NY construction permit. The currently pending WUTV-DT application proposes the use of 1.5 degrees of electrical beam tilt and 0.5 degree mechanical beam tilt toward 155 degrees True.

**INSTANT PROPOSED AMENDMENT**

In response to FCC staff's question WUTV-DT is herein amending its currently pending application. The permittee intends to continue its reliance on the use of a combination of electrical and mechanical antenna beam tilt in excess of one degree, as permitted in Section 73.622(f)(4) of the Commission's rules. The permittee recognizes the necessity to provide a more complete engineering analysis and justification for this proposal, and does so provide such analyses herein.

At this point it is important to note that the Commission's application processing software, tv\_process, is not capable of accounting for the actual elevation pattern of an actual television broadcast antenna. The evaluation program assumes a vertical pattern

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contained in Table 8 in OET Bulletin 69, *Longley-Rice Methodology for Evaluating TV Coverage and Interference*, released on July 2, 1997. TV\_process assumes a fixed electrical beam tilt of three quarters of a degree, and calculates all predictions based on the ERP in the main beam. Such a condition is acceptable in most instances; however, any application which proposes beam tilt in excess of one degree, to reduce interference or for any other reason, cannot be accurately evaluated by tv\_process. The Commission has acknowledged this situation in a recent *Report and Order*<sup>4</sup> stating in paragraph 104: "... If in the future we develop an ability to account for actual vertical radiation patterns and related beam tilt in the full-service DTV context, we will consider applying that ability in the digital LPTV and TV translator context. ..." This condition appears to require that any DTV application which proposes beam tilt in excess of one degree must be processed manually.

**ENGINEERING ANALYSIS AND SHOWING**

The first step is to determine what is required to obtain compliance with the *de minimis* interference criteria. While making no change in the earlier pending application, as it was amended in March 2004 and found acceptable by Industry Canada, other than a reduction in its proposed ERP, we determined, using tv\_process, that compliance with the Commission's 2 percent *de minimis* interference limitation to the Bath, NY NTSC CP is achieved when WUTV-DT would operate with an ERP of 340 kW, a reduction of 4.7 dB. Since WUTV-DT could operate as proposed in the March 2004 amendment, except for its

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<sup>4</sup> See Amendment of Parts 73 and 74 of the Commission's Rules to Establish Rules for Digital Low Power Television, Television Translator, and Television Booster Stations and to Amend Rules for Digital Class A Television Stations, 69FR69325, 19 FCC Rcd 19331 (2004).

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ERP being reduced from 1000 kW to 340 kW, we continued to explore the feasibility of maintaining the basic 1000 kW ERP by using beam tilt in excess of 1.0 degree, as permitted by §73.622(f)(4).

In a Public Notice released on August 10, 1998 the Commission issued *Additional Application Processing Guidelines for Digital Television (DTV)*. The processing guidelines for Antenna beam tilting are set forth on pages 9 and 10. The guidelines require that the applicant determine the depression angle to the radio horizon in a minimum of 36 equally spaced directions beginning with 0 degrees True, and the antenna gain and resulting ERP at each depression angle. In each direction the calculated ERP must be at least one decibel less than the permitted reference ERP. Additionally, if the HAAT exceeds the reference height, the applicant must show for each radial direction that the predicted field strength at the F(50,90) reference noise limited contour is at least one decibel less than the corresponding reference field strength. WUTV-DT's application is based on a site which is located a distance of 0.168 km from its allotment site. Additionally, the proposed HAAT, 299.5 meters, exceeds the allotment HAAT, 280.0 meters. Therefore, WUTV-DT must additionally demonstrate compliance with the -1 dB field strength requirement.

Since we know that the DTV facility as proposed in WUTV-DT's March 2004 amendment has been accepted by Industry Canada at its full 1000 kW ERP, and we have determined, using tv\_process, that the March 2004 amendment passes the Commission's *de minimis* interference guidelines, provided the main beam ERP is reduced from 1000 kW to 340 kW, we will proceed to develop a facility with beam tilt in excess of one degree, and a greater ERP, using a combination of that proposed facility and WUTV-DT's allotment

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facility as the reference. We intend to demonstrate that the currently proposed TLP-16E (C) antenna, adjusted for beam tilt in excess of one degree, ERP of 1000 kW and HAAT reduced from 311.5 to 299.5 meters will provide the requisite interference protection to the Bath, NY CP, and to all other analog and digital television facilities, both domestic and international, while allowing WUTV-DT to provide an improved DTV service to the public.

**REFERENCE FACILITY**

In order to establish a reference facility we determined the location of the noise limited contour resulting from WUTV-DT's allotment facility. We then combined the noise limited contour based on the March 2004 amendment, which has been accepted by Industry Canada, and passes the FCC *de minimis* test except to the Bath, New York CP. We additionally combined, over the arc of 90 degrees True to 140 degrees True toward the service area of the Bath, New York construction permit, the noise limited contour based on the March 2004 amendment, with its ERP reduced to 340 kW. The combined envelope reference noise limited contour for WUTV-DT is shown in Exhibit 1, along with the source contours for reference. The composite reference ERP in each direction, and the distance to the noise limited contour is also shown in Table One.

**RADIO HORIZON**

We first determined, using a 3 arc second terrain database, the 4/3 earth profiles from the radiation centerline of the proposed WUTV-DT antenna, at 478.1 meters AMSL, to the radio horizon in each of 36 directions, beginning at 0 degrees True North, in 10 degree increments. The profiles are shown in Appendix A. Using the actual terrain shown

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in the profile graphs, the distance and depression angle to the radio horizon were determined for each direction. For comparison we also used the Commission's empirical formula in Section 73.625(b)(2) to determine the depression angles, based on the HAAT in each direction, to the radio horizon. Although in some directions the resulting angles are slightly different we chose to use the depression angles calculated using the FCC's methodology. The HAATs, resulting FCC depression angles, terrain profile based calculated depression angles and the terrain profile distances to the radio horizon are shown in tabular form in Table One.

**REQUIRED ANTENNA PARAMETERS**

From the elevation patterns provided by Dielectric for the October 2004 amendment we determined the field value at the depression angle for each azimuth direction. The combination of 1.5 degrees electrical and 0.5 degree mechanical beam tilt toward 155 degrees True, as proposed in October 2004, does not provide sufficient field suppression to achieve the desired result. We found that, with the directional pattern main lobe at 155 degrees True, a combination of 2.0 degrees electrical and 0.5 degree mechanical beam tilt at 120 degrees True provides the required field suppression toward the radio horizon to comply with the Commission's requirement for beam tilt in excess of one degree.

Based on these beam tilt parameters, we obtained new elevation antenna patterns from Dielectric, shown herein in Appendix B, and determined the antenna's main beam depression angle for each azimuth direction. We determined the angle above the antenna's main beam toward the radio horizon and the resultant field at that depression

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angle for each azimuth direction. We combined the fields from the original antenna azimuth pattern to determine the net field at the depression angle toward the radio horizon in each direction. These results are also shown in Table One.

Using these data we calculated the ERP in the antenna's main beam and the ERP toward the radio horizon for each azimuth direction. The next column in Table One shows the calculated difference in decibels between the ERP toward the radio horizon and the maximum allowed ERP shown in the second column in Table One. A comparison, in dB, is also shown between the ERP toward the radio horizon and the ERP in the antenna's main beam.

Finally, as required when the station's proposed HAAT, 299.5 meters, exceeds the allotment reference HAAT, 280 meters, it must be shown that the predicted signal strength at the reference noise limited contour is at least one dB below 41 dBu. The last column in Table One shows the predicted signal at the reference noise limited contour (41 dBu) to be, in each direction, less than 40 dBu. The maximum value of 39.23 dBu is predicted to occur at 320° True. The predicted 41 dBu contour, based on the ERP toward the radio horizon, is shown in Exhibit 2.

We prepared a composite antenna azimuth field pattern based on the antenna's field toward the radio horizon from 90° True to 140° True, and the antenna's main beam field from 150° True around to 80° True. This antenna azimuth field pattern was utilized to determine whether the proposal will comply with the Commission's 2% and 10% *de minimis* interference criteria. The results, from the Commission's application processing software program tv\_process, show compliance with all pertinent requirements. The resulting

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predicted composite 41 dBu contour is also shown in Exhibit 2.

We believe this material demonstrates compliance with Section 73.622(f)(4) of the Commission's rules, and the policies and procedures set forth in the *Application Processing Guidelines* referenced above.

**PROPOSED DIRECTIONAL ANTENNA**

The applicant proposes to modify its currently proposed antenna, a Dielectric TLP-16E (C) custom directional transmitting antenna which is to be mounted on the support structure directly beneath the licensed WUTV(TV) antenna. A Vertical Plan Antenna Sketch showing various elevations at WUTV(TV)'s licensed site is provided in Exhibit 3. The antenna manufacturer's horizontal plane azimuth radiation pattern, illustrating the proposed antenna's main beam directional azimuth pattern characteristics is shown in exhibit 4A, and tabulated in exhibit 4B. The proposed antenna's horizontal plane azimuth pattern toward the radio horizon (-0.489) is shown in exhibit 5A and tabulated in exhibit 5B.

The proposed antenna modification, in accordance with §73.622(f)(4) of the Commission's rules, shall include an increase in electrical beam tilt to 2.0 degrees below the horizontal plane, and an additional mechanical beam tilt of 0.5 degrees below the horizontal plane toward azimuth 120 degrees True. The maximum lobe plane azimuth radiation pattern, as shown in exhibit 4A and tabulated in exhibit 4B, is provided in Form 301 Section III-D "Tech Box" Item 10e. The vertical plane radiation pattern, illustrating the proposed antenna's radiation characteristics above and below the horizontal plane, due only to electrical beam tilt, is shown in exhibit 6A and 6B, and tabulated in exhibit 7.

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Additional horizontal plane azimuth pattern cuts and tabulations, illustrating the effects of both electrical and mechanical beam tilt, are shown for angles 0.09, 0.489 (radio horizon), 0.759, 1.09, 1.259, 1.59, 1.759, 2.09, 2.259, 2.59 and 2.759 below the horizontal plane, and additional vertical plane patterns and tabulations at pertinent azimuths are included in Appendix B. This application complies with §73.685 if the Commission's rules.

**PREDICTED COVERAGE CONTOURS**

The predicted coverage contours were calculated in accordance with the method described in Section 73.684 of the Rules, utilizing the appropriate F(50,90) propagation curves (47 CFR Section 73.699, Figure 9), proposed Effective Radiated Power, and antenna height above average terrain as determined for each profile radial. The average terrain on the eight cardinal radials from 3 kilometers to 16 kilometers from the site, was determined using the National Geophysical Data Center Thirty Second Point Database (TPG-0050) as prescribed in the FCC Rules. The antenna site elevation and coordinates were determined from FCC antenna registration data. Exhibit 8 shows the predicted Noise Limited (41 dBu) contour, and the principal community (48 dBu) contour. The 48 dBu contour completely encompasses the principal community of license, Buffalo, New York.

**ALLOCATION CONSIDERATIONS**

**NTSC Allocation Considerations**

The purpose of the instant application is to resolve predicted interference by WUTV-DT to the Bath, New York construction permit facility. The applicant proposes to employ beam tilt in excess of 1.0 degrees, as permitted by §73.622(f)(4), to reduce WUTV-DT's

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radiated power in the horizontal plane toward the Bath, New York co-channel NTSC construction permit facility's authorized service area sufficiently to achieve compliance with the 2% and 10% *de minimis* interference criteria in Section 73.623(c)(2). As shown on page 4 of Attachment B, the proposed combination of 2.0 degrees electrical and 0.5 degrees mechanical beam tilt, toward 120 degrees True, serves to reduce the effective radiated power in the horizontal plane toward the Bath construction permit to the extent that the predicted reduction in the population that would receive service improves from **5.5%** to **0.05%**. The DTV facility for WUTV-DT as proposed herein now satisfies the *de minimis* interference requirements as they apply to all pertinent authorized NTSC facilities, including licenses, construction permits and any applicable pending applications. It is therefore submitted that the instant proposal, by utilizing antenna beam tilt in excess of one degree, further reduces WUTV-DT's radiated signal toward the radio horizon, thus eliminating interference toward the Bath, NY construction permit service area.

**DTV Allocation Considerations**

A study was performed to determine if the proposed relocation of WUTV-DT is predicted to cause any level of new prohibited interference to domestic DTV stations, expansion construction permits or DTV allotments. Results of the FCC program "tv-process" indicate that the instant proposal for WUTV-DT is predicted to cause no unacceptable level of new interference to the populations served by any domestic DTV station, expansion construction permit or allotment.

In consideration of international DTV requirements, it is noted that Industry Canada has judged that WUTV-DT's currently pending application is acceptable. Since the instant

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amendment proposes no changes toward the Canadian border it is submitted that further international coordination is not necessary.

**Class A Television Allocation Considerations**

As required in Section 73.623(c)(5) of the FCC's Rules, protection of class A TV stations, a study using tv\_process, based on WUTV-DT's instant amendment to its pending application, was performed. The study revealed that WUTV-DT's transmitter site is inside the service contour of class A station WBNF-CA, channel 15, Buffalo, New York. Indeed the stations are co-located. However, WUTV-DT's pending application predates the creation of the Low Power Class A television service and therefore is not required to provide protection to class A LPTV stations beyond that inherently provided by the facilities proposed in the original application. That original application proposed WUTV-DT to operate with 1000 kW at an antenna Height Above Average Terrain (HAAT) of 329 meters. The instant amendment proposes 1000 kW at a HAAT of 299.5 meters, which is predicted to provide a reduction in whatever interference might result from the WUTV-DT initial DTV application.

**BLANKETING AND INTERMODULATION INTERFERENCE**

A number of broadcast and non-broadcast facilities are located within 10 km of the proposed WUTV-DT antenna site. The applicant recognizes its responsibility to remedy complaints of interference created by this proposal in accordance with applicable Rules.

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**ENVIRONMENTAL CONSIDERATIONS**

**RADIO FREQUENCY IMPACT**

Effective October 15, 1997 the FCC adopted new guidelines and procedures for evaluating environmental effects of radio frequency (RF) emissions. The guidelines are generally based on recommendations by the National Council on Radiation Protection and Measurements (NCRP) in NCRP Report No. 86 (1986) and by the American National Standards Institute and the Institute of Electrical and Electronic Engineers, LLC (IEEE) in ANSI/IEEE C95.1-1992 (IEEE C95.1-1991). The guidelines provide a maximum permissible exposure (MPE) level for occupational or "controlled" situations that apply in cases that affect the general public. The FCC Office of Engineering and Technology's technical bulletin No. 65 entitled, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields" (Edition 97-01, August 1997), provides assistance in the determination of whether FCC-regulated transmitting facilities, operations or devices comply with guideline limits for human exposure to radio frequency electromagnetic fields as adopted by the Commission in 1996. Bulletin No. 65 contains the technical information necessary to evaluate compliance with the FCC's policies and guidelines.

The FCC's Maximum Permitted Exposure (MPE) level for "uncontrolled" environments is 0.2 milliwatts per centimeter squared ( $\text{mW/cm}^2$ ) when applied to broadcast facilities operating between 30 MHz and 300 MHz, and for broadcast facilities operating between 300 MHZ and 1500 MHz, primarily UHF TV stations, is derived from the formula,  $(\text{frequency}/1500)$ . The MPE level for "controlled" environments is 1.0 milliwatts per

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centimeter squared ( $\text{mW/cm}^2$ ) for operations between 30 MHz and 300 MHz, and for broadcast stations operating between 300 MHz and 1500 MHz is derived from the formula,  $(\text{frequency}/300)$ . The predicted emissions of WUTV-DT channel 14 must be considered, along with the predicted emissions from other proposed and existing stations at the proposed site. For WUTV-DT, which operates on television Channel 14 (470-476 MHz), the MPE is 0.315 milliwatts per centimeter squared ( $\text{mW/cm}^2$ ) in an "uncontrolled" environment and  $1.58 \text{ mW/cm}^2$  in a "controlled" environment. The proposed WUTV-DT facility will operate with a maximum ERP of 1000 kW from a horizontally polarized directional transmitting antenna with a centerline height of 300.0 meters above ground level (AGL). Considering a very conservative vertical plane relative field factor of 0.3, the WUTV-DT facility is predicted to produce a power density at two meters above ground level of  $0.03385 \text{ mW/cm}^2$ , which is 10.73% of the FCC's guideline value for an "uncontrolled" environment, and 2.146% of the FCC's guideline value for "controlled" environments (see Appendix A). The total percentage of the ANSI value at the proposed site, considering the cumulative radiation of all stations within relevant proximity is only 27.76% of the limit for "uncontrolled" environments, and 5.55% of the limit for "controlled" environments.

**OCCUPATIONAL SAFETY**

The applicant for WUTV-DT is committed to the protection of station personnel and/or tower contractors working in the vicinity of the WUTV-DT antenna. The applicant is committed to reducing power and/or ceasing operation during times of service or maintenance of the transmission systems, when necessary, to ensure protection to

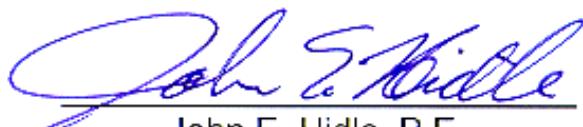
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personnel. In light of the above, the proposed WUTV-DT facility should be excluded from RF environmental processing under Section 1.1307(b) of the Commission's Rules.

**SUMMARY**

It is submitted that the instant proposal for amendment of the pending application for construction permit for WUTV-DT as described herein complies with the Rules, Regulations and relevant Policies of the Federal Communications Commission. This statement, FCC Form 301, Sections III and III-D, and the attached exhibits were prepared by me or under my direct supervision and are believed to be true and correct to the best of my knowledge and belief.

DATED: June 23, 2005



John E. Hidle, P.E.



**WUTV-DT - ATTACHMENT A****PAGE 1**

## TV INTERFERENCE and SPACING ANALYSIS PROGRAM

Date: 10-28-2004 Time: 13:52:14

Record Selected for Analysis

WUTV BPCDT -19991101ACJ BUFFALO NY US  
Channel 14 ERP 1000.0 kW HAAT 311.5 m RCAMSL 490.0 m  
Latitude 043-01-32 Longitude 0078-55-43  
Status APP Zone 1 Border C  
Dir Antenna Make CDB Model 0000000065932 Beam tilt Y Ref Azimuth 0.0  
Last update Cutoff date 19991117 Docket  
Comments  
Applicant WUTV LICENSEE, LLC

Cell Size for Service Analysis 2.0 km/side

Distance Increments for Longley-Rice Analysis 1.00 km

Facility meets maximum height/power limits

Azimuth (Deg)	ERP (kW)	HAAT (m)	41.0 dBu F(50,90) (km)
0.0	32.761	305.8	72.4
45.0	35.910	311.5	73.4
90.0	168.921	318.3	83.8
135.0	850.084	292.3	94.3
180.0	811.801	310.8	96.2
225.0	124.256	313.7	81.1
270.0	21.904	314.5	70.8
315.0	38.809	318.2	74.4

## Evaluation toward Class A Stations

Station inside contour of Class A station  
WBNF-CA 15 BUFFALO NY BLTTL 19990608JD

Class A Evaluation Complete

## SPACING VIOLATION FOUND BETWEEN STATION

WUTV 14 BUFFALO NY BPCDT 19991101ACJ

and station

SHORT TO: 870331LW 14 BATH NY BPCT 19870331LW  
042-18-28 0077-13-17  
Req. separation 217.3 Actual separation 161.1 Short 56.2 km

SHORT TO: WUTV-DT 14 BUFFALO NY DTVPLN DTVP0135  
043-01-27 0078-55-40  
Req. separation 196.3 Actual separation 0.2 Short 196.1 km

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## LANDMOBILE SPACING VIOLATIONS FOUND

NONE

Proposed facility OK to FCC Monitoring Stations

Proposed facility OK toward West Virginia quite zone

Proposed facility OK toward Table Mountian

Proposed facility is within the Canadian coordination distance  
Distance to border = 7.9km

Proposed facility is beyond the Mexican coordination distance

Proposed station is OK toward AM broadcast stations

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## Start of Interference Analysis

Proposed Station				
Channel	Call	City/State	ARN	
14	WUTV	BUFFALO NY	BPCDT	19991101ACJ

## Stations Potentially Affected by Proposed Station

Chan	Call	City/State	Dist(km)	Status	Application Ref. No.
14	WKBD	DETROIT MI	362.8	LIC	BLCDT -20001215ABR
14	WKBD	DETROIT MI	362.8	CP	BPCDT -20000428ABU
14	870331LW	BATH NY	160.7	CP	BPCT -19870331LW
15	WBNF-CA	BUFFALO NY	0.0	LIC	BLTTL -19990608JD
15	WPSX-TV	CLEARFIELD PA	215.3	CP	BPEDT -20000501AHR
15	WPSX-TV	CLEARFIELD PA	215.3	APP	BMPEDT -20030527ADP
17	WNED-TV	BUFFALO NY	0.8	LIC	BLET -19870206KE
21	WXXI-TV	ROCHESTER NY	109.8	LIC	BLET -19800813KE
14	WKBD-DT	DETROIT MI	362.8	PLN	DTVPLN -DTVP0126
15	WPSX-DT	CLEARFIELD PA	215.3	PLN	DTVPLN -DTVP0180
15	CBLFT13	BELLEVILLE ON	199.0	LIC	CANADA -00000814
18	CICOTV74	PETERBOROUGH ON	137.4	LIC	CANADA -00000982
22	CHEXTV2	OSHAWA ON	103.7	LIC	CANADA -00001154

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# WUTV-DT - ATTACHMENT A

PAGE 3

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## Analysis of Interference to Affected Station 3

### NTSC Baseline Analysis

Channel	Call	City/State	Application Ref. No.
14	NEW	BATH NY	DTVPLN -NPLN1051

### Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application Ref. No.
14	WUTV-DT	BUFFALO NY	160.6	PLN	DTVPLN -DTVP0135
14	WPTZ-DT	NORTH POLE NY	381.2	PLN	DTVPLN -DTVP0136
15	WPSX-DT	CLEARFIELD PA	166.1	PLN	DTVPLN -DTVP0180
16	WXXI-DT	ROCHESTER NY	96.6	PLN	DTVPLN -DTVP0226
17	WIXT-DT	SYRACUSE NY	120.8	PLN	DTVPLN -DTVP0263
28	WUHF-DT	ROCHESTER NY	96.6	PLN	DTVPLN -DTVP0678
29	WILF-DT	WILLIAMSPORT PA	123.5	PLN	DTVPLN -DTVP0718
18	WETMTV	ELMIRA NY	36.5	PLN	DTVPLN -NPLN1135
21	WXXITV	ROCHESTER NY	96.6	PLN	DTVPLN -NPLN1141
29	WUTV	BUFFALO NY	160.6	PLN	DTVPLN -NPLN1154
28	WBRE-TV	WILKES-BARRE PA	168.0	PLN	DTVPLN -NPLN1365
14	WTMW	ARLINGTON VA	374.5	PLN	DTVPLN -NPLN1545

Results for: 14N NY BATH

	DTVPLN	NPLN1051	PLN
POPULATION		AREA (sq km)	
within Noise Limited Contour	610747	17723.6	
not affected by terrain losses	398377	14396.6	
lost to NTSC IX	32958	334.7	
lost to additional IX by ATV	33626	576.7	
lost to all IX	66584	911.4	

### Analysis of current record

Channel	Call	City/State	Application Ref. No.
14	870331LW	BATH NY	BPCT -19870331LW

### Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application Ref. No.
14	WUTV	BUFFALO NY	160.7	APP	BPCDT -19991101ACJ
14	WFDC-TV	ARLINGTON VA	374.5	CP MOD	BMPCT -19910730KE
15	WPSX-TV	CLEARFIELD PA	166.2	CP	BPEDT -20000501AHR
15	WPSX-TV	CLEARFIELD PA	166.2	APP	BMPEDT -20030527ADP
16	WXXI-TV	ROCHESTER NY	96.6	CP	BPEDT -19990114KF
17	WIXT-TV	SYRACUSE NY	120.8	LIC	BLCDT -20030812ABK
18	WETM-TV	ELMIRA NY	36.5	LIC	BLCT -19980615KE
21	WXXI-TV	ROCHESTER NY	96.6	LIC	BLET -19800813KE
28	WUHF	ROCHESTER NY	96.6	CP	BPCDT -19991101ACD
28	WBRE-TV	WILKES-BARRE PA	168.0	LIC	BLCT -19891005KF
29	WUTV	BUFFALO NY	160.7	LIC	BLCT -19990604KJ
29	WILF	WILLIAMSPORT PA	123.5	CP	BPCDT -19980825KJ
14	WUTV-DT	BUFFALO NY	160.6	PLN	DTVPLN -DTVP0135
14	WPTZ-DT	NORTH POLE NY	381.2	PLN	DTVPLN -DTVP0136
15	WPSX-DT	CLEARFIELD PA	166.1	PLN	DTVPLN -DTVP0180
16	WXXI-DT	ROCHESTER NY	96.6	PLN	DTVPLN -DTVP0226
17	WIXT-DT	SYRACUSE NY	120.8	PLN	DTVPLN -DTVP0263
28	WUHF-DT	ROCHESTER NY	96.6	PLN	DTVPLN -DTVP0678
29	WILF-DT	WILLIAMSPORT PA	123.5	PLN	DTVPLN -DTVP0718

Carl T. Jones Corporation

7901 Yarnwood Court, Springfield, Virginia 22153-2899 (703) 569-7704 Fax: (703) 569-6417

**WUTV-DT - ATTACHMENT A****PAGE 4**

Total scenarios = 1

Result key: 1  
Scenario 1 Affected station 3  
Before Analysis

Results for: 14N NY BATH

	BPCT	19870331LW	CP
	POPULATION	AREA (sq km)	
within Noise Limited Contour	610747	17723.6	
not affected by terrain losses	398377	14396.6	
lost to NTSC IX	32981	338.7	
lost to additional IX by ATV	33603	572.6	
lost to all IX	66584	911.4	

Potential Interferring Stations Included in above Scenario 1

18N NY ELMIRA	BLCT	19980615KE	LIC
21N NY ROCHESTER	BLET	19800813KE	LIC
14A NY BUFFALO	DTVPLN	DTVP0135	PLN

After Analysis

Results for: 14N NY BATH

	BPCT	19870331LW	CP
	POPULATION	AREA (sq km)	
within Noise Limited Contour	610747	17723.6	
not affected by terrain losses	398377	14396.6	
lost to NTSC IX	32981	338.7	
lost to additional IX by ATV	67369	1701.8	
lost to all IX	100350	2040.5	

Potential Interferring Stations Included in above Scenario 1

18N NY ELMIRA	BLCT	19980615KE	LIC
21N NY ROCHESTER	BLET	19800813KE	LIC
14A NY BUFFALO	BPCDT	19991101ACJ	APP

The following station failed the de minimis interference criteria.

14D NY BUFFALO BPCDT 19991101ACJ  
ERP 1000.00 kW HAAT 311.5 m RCAMSL 490.0 m  
Antenna CDB 0000000065932

Due to interference to the following station and scenario: 1

14N NY BATH	BPCT	19870331LW
ERP 1000.00 kW HAAT	318.0 m	RCAMSL 766.0 m
Antenna	none	

Percent new DTV interference without proposal: 5.5 BPCT 19870331LW  
Percent new DTV interference with proposal: 11.0 BPCT 19870331LW

**WUTV-DT - ATTACHMENT B****PAGE 1**

## TV INTERFERENCE and SPACING ANALYSIS PROGRAM

Date: 05-05-2005 Time: 10:18:34

Record Selected for Analysis

WUTV BPCDT -NEWWUTVDT BUFFALO NY US  
Channel 14 ERP 1000.0 kW HAAT 299.5 m RCAMSL 478.1 m  
Latitude 043-01-32 Longitude 0078-55-43  
Status APP Zone 1 Border C  
Dir Antenna Make CDB Model 00000000099999 Beam tilt Y Ref Azimuth 0.0  
Last update Cutoff date 19991117 Docket  
Comments  
Applicant WUTV LICENSEE, LLC

Cell Size for Service Analysis 2.0 km/side

Distance Increments for Longley-Rice Analysis 1.00 km

Facility meets maximum height/power limits

Azimuth (Deg)	ERP (kW)	HAAT (m)	41.0 dBu F(50,90) (km)
0.0	32.761	293.9	71.6
45.0	35.910	299.6	72.5
90.0	39.601	306.4	73.6
135.0	176.820	280.4	79.9
180.0	811.801	298.9	94.8
225.0	124.256	301.8	79.9
270.0	21.904	302.6	70.0
315.0	38.809	306.3	73.4

## Evaluation toward Class A Stations

Station inside contour of Class A station  
WBNF-CA 15 BUFFALO NY BLTTL 19990608JD

Class A Evaluation Complete

SPACING VIOLATION FOUND BETWEEN STATION

WUTV 14 BUFFALO NY BPCDT NEWWUTVDT

and station

SHORT TO: 870331LW 14 BATH NY BPCT 19870331LW  
042-18-28 0077-13-17  
Req. separation 217.3 Actual separation 161.1 Short 56.2 km

SHORT TO: WUTV-DT 14 BUFFALO NY DTVPLN DTVP0135  
043-01-27 0078-55-40  
Req. separation 196.3 Actual separation 0.2 Short 196.1 km

## LANDMOBILE SPACING VIOLATIONS FOUND

NONE

Proposed facility OK to FCC Monitoring Stations

Proposed facility OK toward West Virginia quite zone

Proposed facility OK toward Table Mountian

Proposed facility is within the Canadian coordination distance  
Distance to border = 7.9km

Proposed facility is beyond the Mexican coordination distance

Proposed station is OK toward AM broadcast stations

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## Start of Interference Analysis

Proposed Station			
Channel	Call	City/State	ARN
14	WUTV	BUFFALO NY	BPCDT
			NEWWUTVDT

## Stations Potentially Affected by Proposed Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
14	WKBD	DETROIT MI	362.8	LIC	BLCDT	-20001215ABR
14	WKBD	DETROIT MI	362.8	CP	BPCDT	-20000428ABU
14	870331LW	BATH NY	160.7	CP	BPCT	-19870331LW
15	WBNF-CA	BUFFALO NY	0.0	LIC	BLTTL	-19990608JD
15	WPSX-TV	CLEARFIELD PA	215.3	CP	BPEDT	-20000501AHR
15	WPSX-TV	CLEARFIELD PA	215.3	APP	BMPEDT	-20030527ADP
17	WNED-TV	BUFFALO NY	0.8	LIC	BLET	-19870206KE
21	WXXI-TV	ROCHESTER NY	109.8	LIC	BLET	-19800813KE
14	WKBD-DT	DETROIT MI	362.8	PLN	DTVPLN	-DTVP0126
15	WPSX-DT	CLEARFIELD PA	215.3	PLN	DTVPLN	-DTVP0180
22	CHEXTV2	OSHAWA ON	103.7	LIC	CANADA	-00001154

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## Analysis of Interference to Affected Station 3

## NTSC Baseline Analysis

Channel	Call	City/State	Application Ref. No.
14	NEW	BATH NY	DTVPLN -NPLN1051

## Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application Ref. No.
14	WUTV-DT	BUFFALO NY	160.6	PLN	DTVPLN -DTVP0135
14	WPTZ-DT	NORTH POLE NY	381.2	PLN	DTVPLN -DTVP0136
15	WPSX-DT	CLEARFIELD PA	166.1	PLN	DTVPLN -DTVP0180
16	WXXI-DT	ROCHESTER NY	96.6	PLN	DTVPLN -DTVP0226
17	WIXT-DT	SYRACUSE NY	120.8	PLN	DTVPLN -DTVP0263
28	WUHF-DT	ROCHESTER NY	96.6	PLN	DTVPLN -DTVP0678
29	WILF-DT	WILLIAMSPORT PA	123.5	PLN	DTVPLN -DTVP0718
18	WETMTV	ELMIRA NY	36.5	PLN	DTVPLN -NPLN1135
21	WXXITV	ROCHESTER NY	96.6	PLN	DTVPLN -NPLN1141
29	WUTV	BUFFALO NY	160.6	PLN	DTVPLN -NPLN1154
28	WBRE-TV	WILKES-BARRE PA	168.0	PLN	DTVPLN -NPLN1365
14	WTMW	ARLINGTON VA	374.5	PLN	DTVPLN -NPLN1545

Results for: 14N NY BATH

	DTVPLN	NPLN1051	PLN
POPULATION	AREA (sq km)		
within Noise Limited Contour	610747	17723.6	
not affected by terrain losses	398377	14396.6	
lost to NTSC IX	32958	334.7	
lost to additional IX by ATV	33626	576.7	
lost to all IX	66584	911.4	

## Analysis of current record

Channel	Call	City/State	Application Ref. No.
14	870331LW	BATH NY	BPCT -19870331LW

## Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application Ref. No.
14	WUTV	BUFFALO NY	160.7	APP	BPCDT -NEWWUTVDT
14	WFDC-TV	ARLINGTON VA	374.5	CP MOD	BMPCT -20041217AXU
15	WPSX-TV	CLEARFIELD PA	166.2	CP	BPEDT -20000501AHR
15	WPSX-TV	CLEARFIELD PA	166.2	APP	BMPEDT -20030527ADP
16	WXXI-TV	ROCHESTER NY	96.6	CP MOD	BMPEDT -20041101AEL
16	WXXI-TV	ROCHESTER NY	96.6	LIC	BLEDT -20030916ABS
17	WIXT-TV	SYRACUSE NY	120.8	LIC	BLCDT -20030812ABK
18	WETM-TV	ELMIRA NY	36.5	LIC	BLCT -19980615KE
21	WXXI-TV	ROCHESTER NY	96.6	LIC	BLET -19800813KE
28	WUHF	ROCHESTER NY	96.6	CP	BPCDT -19991101ACD
28	WBRE-TV	WILKES-BARRE PA	168.0	LIC	BLCT -19891005KF
29	WUTV	BUFFALO NY	160.7	LIC	BLCT -19990604KJ
29	WILF	WILLIAMSPORT PA	123.5	CP	BPCDT -19980825KJ
14	WUTV-DT	BUFFALO NY	160.6	PLN	DTVPLN -DTVP0135
14	WPTZ-DT	NORTH POLE NY	381.2	PLN	DTVPLN -DTVP0136
15	WPSX-DT	CLEARFIELD PA	166.1	PLN	DTVPLN -DTVP0180
16	WXXI-DT	ROCHESTER NY	96.6	PLN	DTVPLN -DTVP0226
17	WIXT-DT	SYRACUSE NY	120.8	PLN	DTVPLN -DTVP0263
28	WUHF-DT	ROCHESTER NY	96.6	PLN	DTVPLN -DTVP0678
29	WILF-DT	WILLIAMSPORT PA	123.5	PLN	DTVPLN -DTVP0718

Total scenarios = 1

Result key: 1  
 Scenario 1 Affected station 3  
 Before Analysis

Results for: 14N NY BATH

	BPCT	19870331LW	CP
	POPULATION	AREA (sq km)	
within Noise Limited Contour	610747	17723.6	
not affected by terrain losses	398377	14396.6	
lost to NTSC IX	32981	338.7	
lost to additional IX by ATV	33603	572.6	
lost to all IX	66584	911.4	

Potential Interfering Stations Included in above Scenario 1

18N NY ELMIRA	BLCT	19980615KE	LIC
21N NY ROCHESTER	BLET	19800813KE	LIC
14A NY BUFFALO	DTVPLN	DTVP0135	PLN

After Analysis

Results for: 14N NY BATH

	BPCT	19870331LW	CP
	POPULATION	AREA (sq km)	
within Noise Limited Contour	610747	17723.6	
not affected by terrain losses	398377	14396.6	
lost to NTSC IX	32981	338.7	
lost to additional IX by ATV	33912	758.1	
lost to all IX	66893	1096.9	

Potential Interfering Stations Included in above Scenario 1

18N NY ELMIRA	BLCT	19980615KE	LIC
21N NY ROCHESTER	BLET	19800813KE	LIC
14A NY BUFFALO	BPCDT	NEWWUTVDT	APP

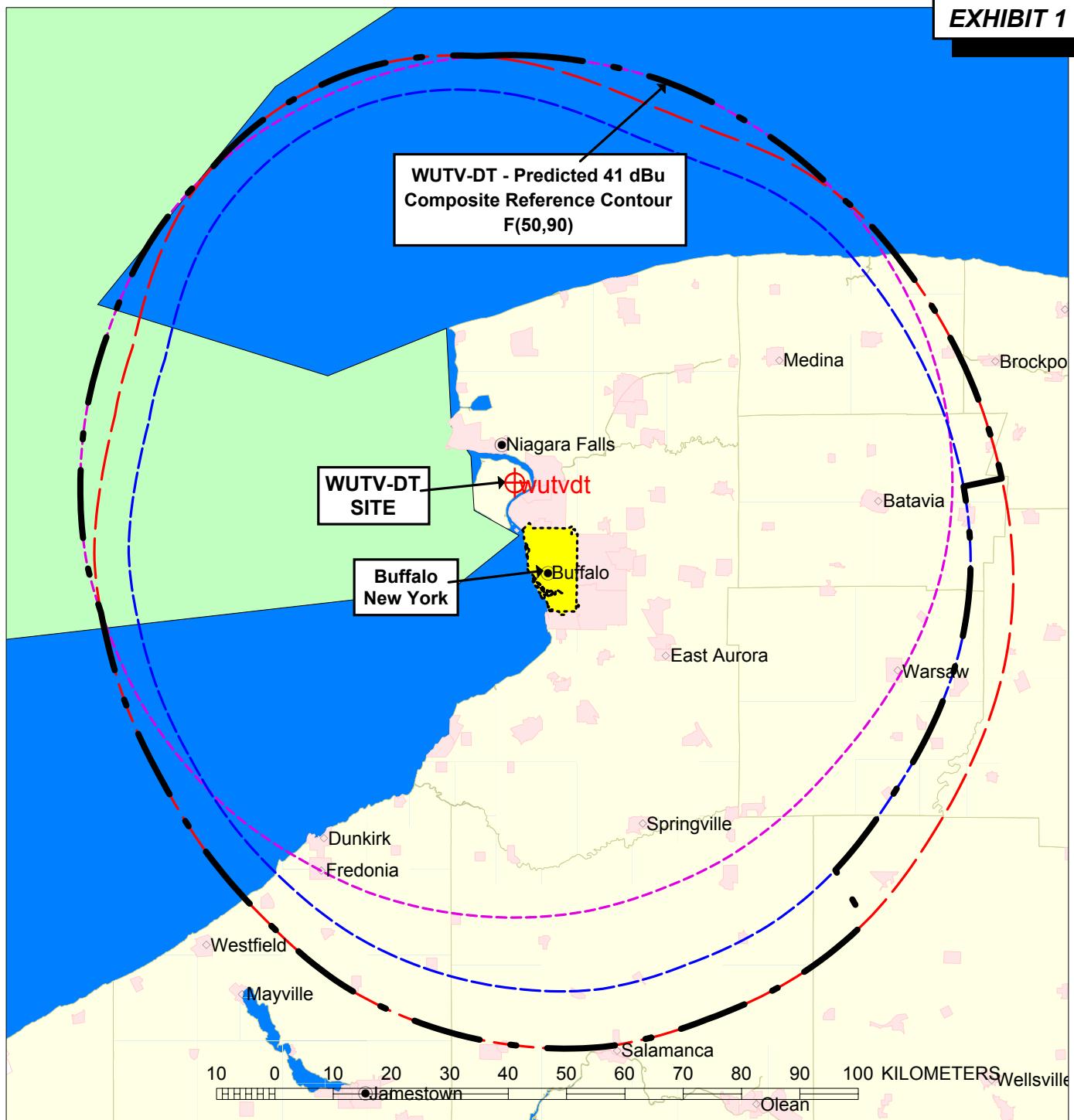
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# WUTV-DT - TABLE ONE

	REFERENCE DATA		RADIO HORIZON				ANTENNA DATA		Antenna E-Field			ERP		ERP Difference - dB		
AZ	Maximum Allowed ERP (kW)	Distance to 41 dBu NLC (km)	HAAT meters	Depression angle to Radio Horizon degrees (FCC)	Depression angle to Radio Horizon degrees (terrain)	Distance to radio horizon kilometers (terrain)	Antenna main beam depression angle degrees	Angle to Radio horizon above main beam	Antenna Elevation Field toward Radio Horizon	Antenna Azimuth Field at Main Beam	Net Field toward Radio Horizon	Maximum Main Beam	Toward Radio Horizon	Delta dB Horizon v. Allowed	Delta dB Horizon v. Maximum	Signal at reference NLC (dBu)
0	38.00	72.46	294.8	0.48	0.56	76.0	1.750	1.274	0.735	0.181	0.133	32.76	17.70	-3.32	-2.67	37.68
10	38.50	72.36	292.9	0.47	0.56	76.2	1.829	1.355	0.713	0.149	0.106	22.20	11.29	-5.33	-2.94	35.67
20	39.00	72.60	295.0	0.48	0.56	76.0	1.913	1.437	0.683	0.128	0.087	16.38	7.64	-7.08	-3.31	33.92
30	39.60	72.60	293.9	0.47	0.56	76.0	2.000	1.525	0.642	0.137	0.088	18.77	7.74	-7.09	-3.85	33.91
40	40.20	72.93	297.1	0.48	0.56	76.0	2.087	1.609	0.605	0.172	0.104	29.58	10.83	-5.70	-4.36	35.30
50	42.85	73.58	301.0	0.48	0.56	57.5	2.171	1.690	0.575	0.207	0.119	42.85	14.17	-4.81	-4.81	36.19
60	56.17	75.12	301.1	0.48	0.53	59.0	2.250	1.769	0.540	0.237	0.128	56.17	16.38	-5.35	-5.35	35.65
70	75.63	77.17	304.6	0.48	0.48	60.0	2.321	1.838	0.509	0.275	0.140	75.63	19.59	-5.87	-5.87	35.13
80	110.23	79.62	306.2	0.48	0.48	59.0	2.383	1.898	0.482	0.332	0.160	110.22	25.61	-6.34	-6.34	34.66
90	57.43	75.71	306.5	0.48	0.43	64.9	2.433	1.948	0.460	0.411	0.189	168.92	35.74	-2.06	-6.74	38.94
100	89.13	78.24	305.4	0.48	0.39	62.6	2.470	1.986	0.445	0.512	0.228	262.14	51.91	-2.35	-7.03	38.65
110	134.95	80.26	299.8	0.48	0.28	63.8	2.492	2.013	0.435	0.630	0.274	396.90	75.10	-2.55	-7.23	38.45
120	194.84	81.63	290.8	0.47	0.24	67.0	2.500	2.028	0.432	0.757	0.327	573.05	106.94	-2.61	-7.29	38.39
130	262.70	82.96	285.1	0.47	0.22	72.9	2.492	2.025	0.435	0.879	0.382	772.64	146.20	-2.55	-7.23	38.45
140	316.62	84.94	289.4	0.47	0.22	58.0	2.470	1.999	0.445	0.965	0.429	931.23	184.41	-2.35	-7.03	38.65
150	992.02	96.10	294.6	0.48	0.24	55.4	2.433	1.958	0.461	0.996	0.459	992.02	210.82	-6.73	-6.73	34.27
160	996.00	96.24	295.4	0.48	0.28	80.7	2.383	1.907	0.482	0.998	0.481	996.00	231.40	-6.34	-6.34	34.66
170	956.49	96.45	300.1	0.48	0.22	81.4	2.321	1.842	0.509	0.978	0.498	956.48	247.81	-5.87	-5.87	35.13
180	811.80	94.93	300.1	0.48	0.22	68.2	2.250	1.770	0.539	0.901	0.486	811.80	235.85	-5.37	-5.37	35.63
190	622.52	92.56	301.0	0.48	0.30	73.0	2.171	1.690	0.573	0.789	0.452	622.52	204.39	-4.84	-4.84	36.16
200	434.28	89.31	301.3	0.48	0.28	88.9	2.087	1.606	0.608	0.659	0.401	434.28	160.54	-4.32	-4.32	36.68
210	272.48	84.99	298.2	0.48	0.32	71.0	2.000	1.522	0.644	0.522	0.336	272.48	113.01	-3.82	-3.82	37.18
220	157.61	81.38	301.0	0.48	0.50	71.0	1.913	1.433	0.678	0.397	0.269	157.61	72.45	-3.38	-3.38	37.62
230	94.86	78.08	299.7	0.48	0.50	71.0	1.829	1.349	0.708	0.308	0.218	94.86	47.55	-3.00	-3.00	38.00
240	64.01	75.78	300.0	0.48	0.50	71.0	1.750	1.270	0.739	0.253	0.187	64.01	34.96	-2.63	-2.63	38.37
250	44.94	73.69	299.0	0.48	0.50	71.0	1.679	1.200	0.764	0.212	0.162	44.94	26.23	-2.34	-2.34	38.66
260	41.60	73.69	304.5	0.48	0.48	77.4	1.617	1.134	0.787	0.178	0.140	31.68	19.62	-3.26	-2.08	37.74
270	41.80	73.50	301.6	0.48	0.48	73.8	1.567	1.086	0.804	0.148	0.119	21.90	14.16	-4.70	-1.89	36.30
280	41.50	73.43	301.4	0.48	0.47	79.7	1.530	1.049	0.814	0.129	0.105	16.64	11.03	-5.76	-1.79	35.24
290	41.20	73.30	300.2	0.48	0.56	73.5	1.508	1.028	0.823	0.130	0.107	16.90	11.45	-5.56	-1.69	35.44
300	41.00	73.72	305.9	0.48	0.56	75.0	1.500	1.016	0.828	0.151	0.125	22.80	15.63	-4.19	-1.64	36.81
310	40.20	73.92	309.8	0.49	0.56	75.0	1.508	1.020	0.819	0.182	0.149	33.12	22.22	-2.58	-1.73	38.42
320	44.94	74.21	305.5	0.48	0.56	79.0	1.530	1.046	0.816	0.212	0.173	44.94	29.93	-1.77	-1.77	39.23
330	55.23	74.90	299.5	0.48	0.56	78.0	1.567	1.088	0.800	0.235	0.188	55.23	35.34	-1.94	-1.94	39.06
340	55.70	74.74	297.0	0.48	0.56	78.0	1.617	1.140	0.788	0.236	0.186	55.70	34.58	-2.07	-2.07	38.93
350	45.37	73.55	296.6	0.48	0.56	80.0	1.679	1.202	0.765	0.213	0.163	45.37	26.55	-2.33	-2.33	38.67

June 23, 2005





### PREDICTED COVERAGE CONTOURS WUTV-DT - BUFFALO, NEW YORK 41 dBu COMPOSITE REFERENCE CONTOUR CH. 14 - 1000 kW - 299.5 m HAAT

41 dBu - Allotment Facility Reference

41 dBu - 340 kW - ERP 299.5 m HAAT

41 dBu - 1000 kW - ERP 299.5 m HAAT

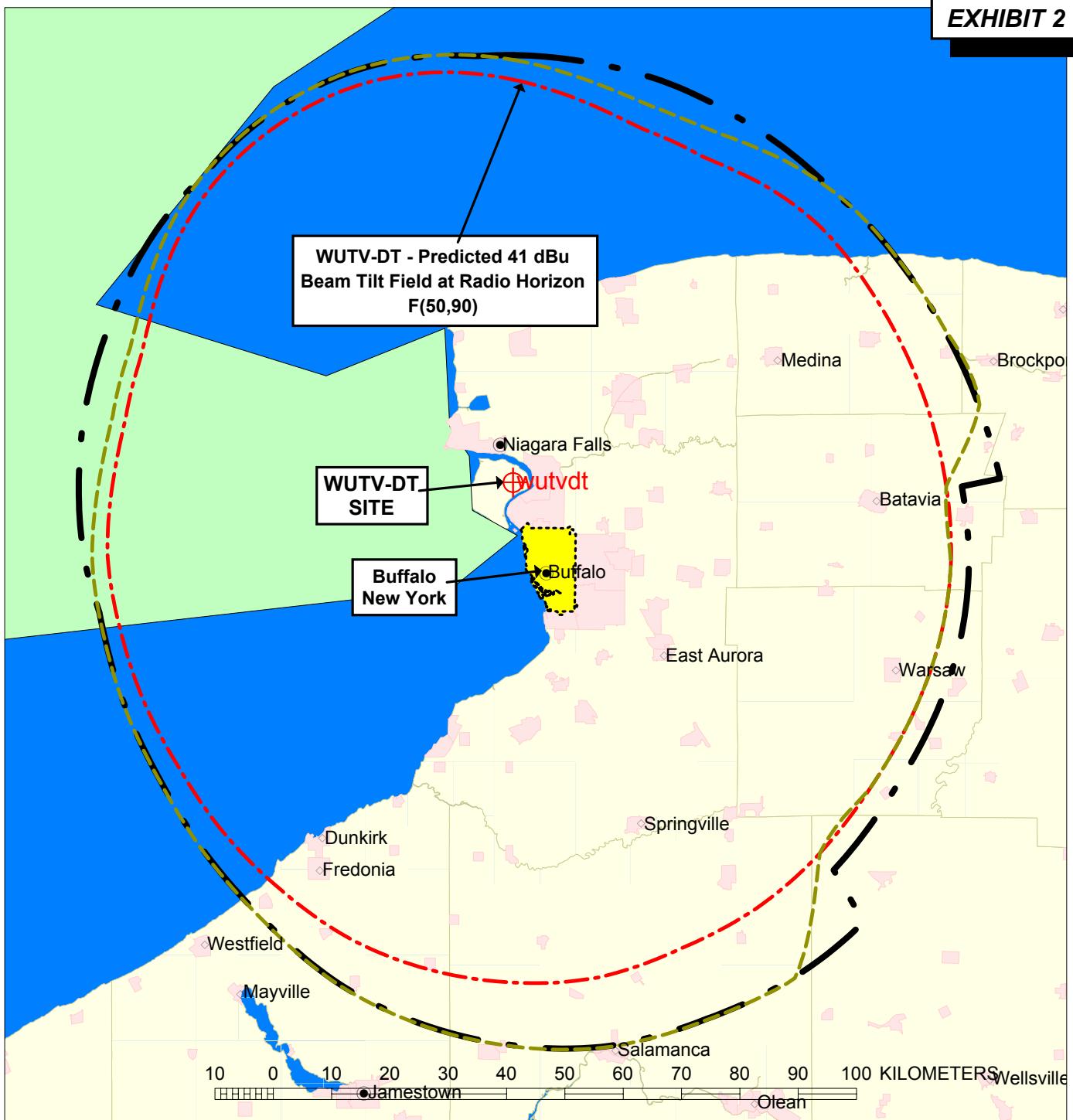
41 dBu - Noise Limited Contour  
COMPOSITE REFERENCE

CH. 14 - 1000 kW ERP

299.5 meters HAAT

JUNE 2005

CARL T. JONES  
CORPORATION



41 dBu - Beam Tilt Field at Radio Horizon

41 dBu - Beam Tilt Field at Radio Horizon from  
90 to 140 degrees and Antenna Main Beam  
Field from 150 to 80 degrees

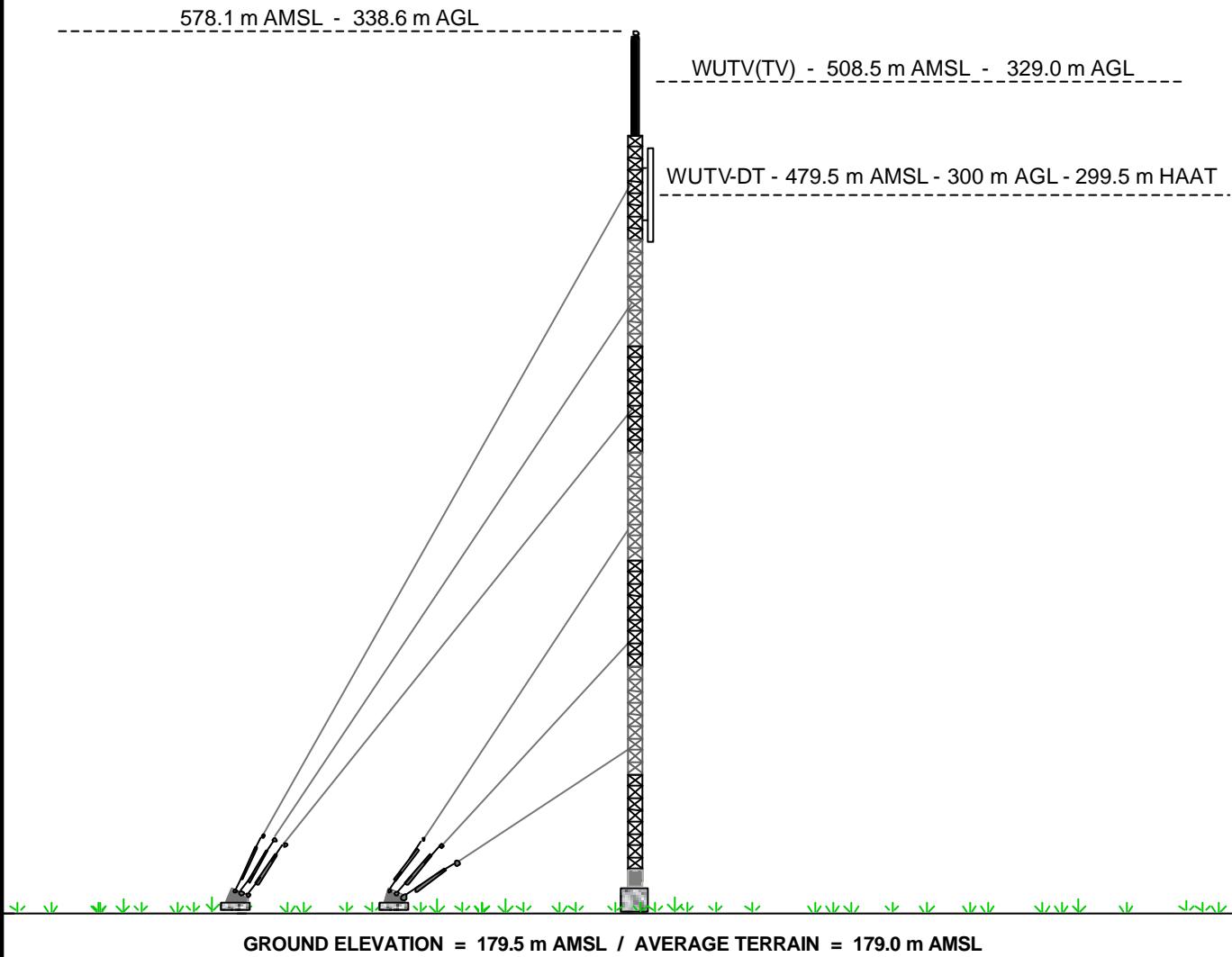
41 dBu - Noise Limited Contour

**COMPOSITE REFERENCE**  
**CH. 14 - 1000 kW ERP**  
**299.5 meters HAAT**

JUNE 2005  
**CARL T. JONES**  
CORPORATION

COORDINATES NAD-27  
NORTH LATITUDE: 43° 01' 32"  
WEST LONGITUDE: 78° 55' 43"  
FCC REGISTRATION No. 1019110

EXHIBIT 3



**VERTICAL PLAN ANTENNA SKETCH**  
WUTV-DT - BUFFALO, NEW YORK  
Ch. 14 - 1000 kW ERP - 299.5 m HAAT  
JUNE, 2005

 CARL T. JONES CORPORATION

NOTE : NOT DRAWN TO SCALE

# Dielectric

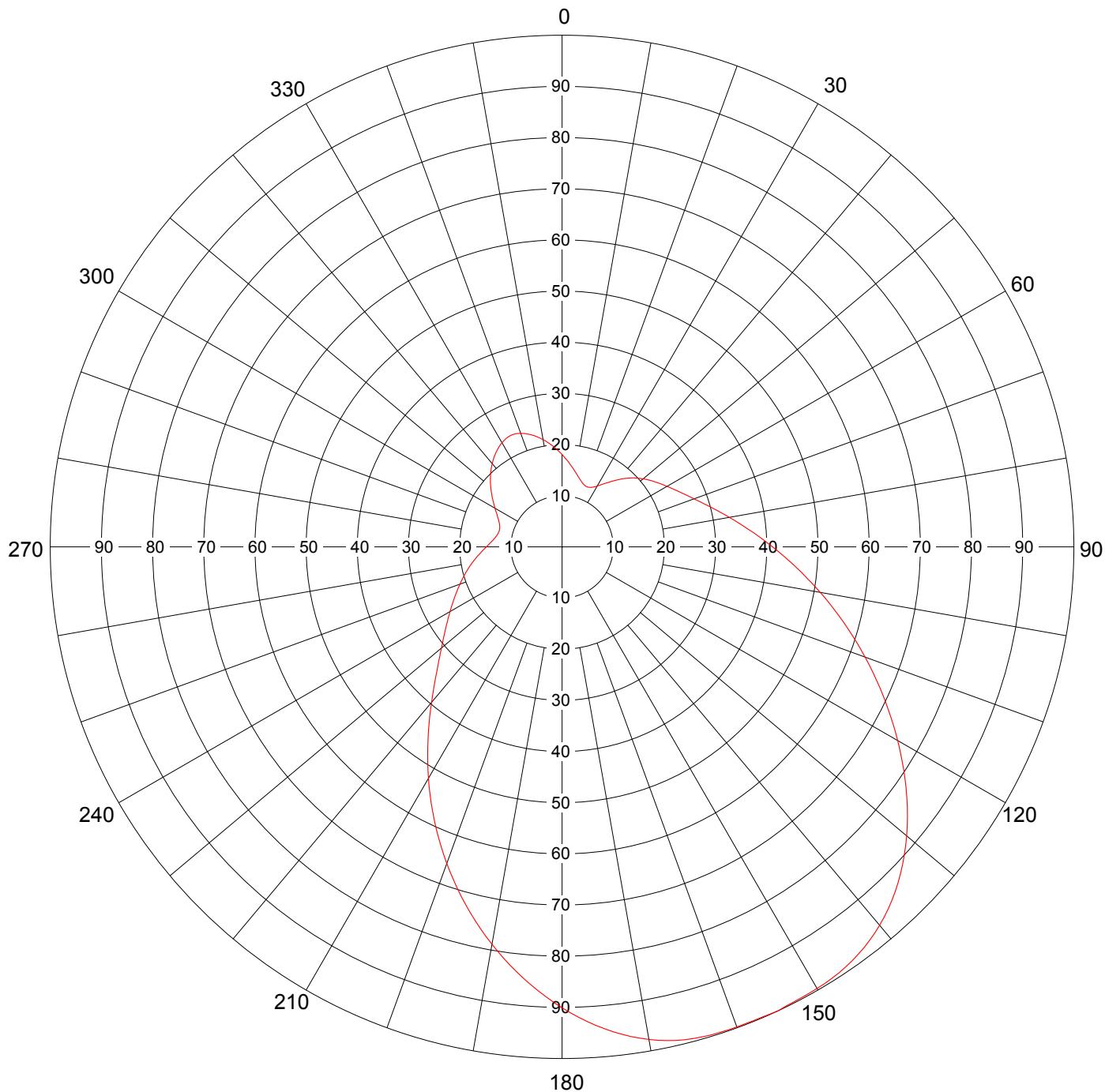
Date **11 May 2005** Exhibit 4A  
Call Letters **WUTV-DT** Channel **14**  
Location **Buffalo, New York**  
Customer  
Antenna Type **TLP-16E (C)**

## AZIMUTH PATTERN

Gain  
Calculated / Measured

**3.90 (5.91 dB)**  
**Calculated**

Frequency **473 MHz**  
Drawing # **TLP-E**



Remarks:



Date **11 May 2005** Exhibit 4B  
Call Letters **WUTV-DT** Channel **14**  
Location **Buffalo, New York**  
Customer  
Antenna Type **TLP-16E (C)**

### TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing # **TLP-E**

Angle	Field																
0	0.181	45	0.190	90	0.411	135	0.928	180	0.901	225	0.346	270	0.148	315	0.198		
1	0.177	46	0.194	91	0.420	136	0.937	181	0.891	226	0.338	271	0.146	316	0.201		
2	0.174	47	0.197	92	0.430	137	0.945	182	0.880	227	0.330	272	0.143	317	0.204		
3	0.171	48	0.201	93	0.439	138	0.952	183	0.870	228	0.322	273	0.141	318	0.207		
4	0.167	49	0.204	94	0.449	139	0.959	184	0.859	229	0.315	274	0.139	319	0.210		
5	0.164	50	0.207	95	0.459	140	0.965	185	0.848	230	0.308	275	0.137	320	0.212		
6	0.161	51	0.210	96	0.469	141	0.971	186	0.836	231	0.301	276	0.135	321	0.215		
7	0.158	52	0.213	97	0.480	142	0.976	187	0.825	232	0.295	277	0.133	322	0.218		
8	0.155	53	0.216	98	0.490	143	0.980	188	0.813	233	0.289	278	0.132	323	0.220		
9	0.152	54	0.219	99	0.501	144	0.984	189	0.801	234	0.283	279	0.130	324	0.223		
10	0.149	55	0.222	100	0.512	145	0.988	190	0.789	235	0.277	280	0.129	325	0.225		
11	0.146	56	0.225	101	0.523	146	0.991	191	0.776	236	0.272	281	0.128	326	0.227		
12	0.143	57	0.228	102	0.535	147	0.993	192	0.764	237	0.267	282	0.128	327	0.229		
13	0.141	58	0.231	103	0.546	148	0.995	193	0.751	238	0.262	283	0.127	328	0.231		
14	0.138	59	0.234	104	0.558	149	0.996	194	0.738	239	0.257	284	0.127	329	0.233		
15	0.136	60	0.237	105	0.570	150	0.996	195	0.725	240	0.253	285	0.127	330	0.235		
16	0.134	61	0.240	106	0.581	151	0.997	196	0.712	241	0.248	286	0.127	331	0.236		
17	0.132	62	0.243	107	0.593	152	0.997	197	0.699	242	0.244	287	0.127	332	0.238		
18	0.131	63	0.247	108	0.606	153	0.998	198	0.685	243	0.240	288	0.128	333	0.239		
19	0.129	64	0.250	109	0.618	154	0.998	199	0.672	244	0.235	289	0.129	334	0.239		
20	0.128	65	0.254	110	0.630	155	1.000	200	0.659	245	0.231	290	0.130	335	0.240		
21	0.128	66	0.258	111	0.643	156	0.999	201	0.645	246	0.227	291	0.131	336	0.240		
22	0.127	67	0.262	112	0.655	157	0.999	202	0.631	247	0.223	292	0.133	337	0.239		
23	0.127	68	0.266	113	0.668	158	0.999	203	0.618	248	0.220	293	0.135	338	0.239		
24	0.127	69	0.270	114	0.680	159	0.999	204	0.604	249	0.216	294	0.137	339	0.238		
25	0.128	70	0.275	115	0.693	160	0.998	205	0.590	250	0.212	295	0.139	340	0.236		
26	0.129	71	0.279	116	0.706	161	0.998	206	0.577	251	0.209	296	0.141	341	0.235		
27	0.131	72	0.284	117	0.719	162	0.998	207	0.563	252	0.205	297	0.143	342	0.233		
28	0.133	73	0.289	118	0.731	163	0.997	208	0.549	253	0.202	298	0.146	343	0.231		
29	0.135	74	0.295	119	0.744	164	0.996	209	0.536	254	0.198	299	0.149	344	0.229		
30	0.137	75	0.301	120	0.757	165	0.995	210	0.522	255	0.195	300	0.151	345	0.226		
31	0.140	76	0.306	121	0.770	166	0.993	211	0.509	256	0.191	301	0.154	346	0.224		
32	0.143	77	0.312	122	0.783	167	0.990	212	0.495	257	0.188	302	0.157	347	0.221		
33	0.146	78	0.319	123	0.795	168	0.986	213	0.482	258	0.185	303	0.160	348	0.219		
34	0.149	79	0.325	124	0.808	169	0.982	214	0.469	259	0.181	304	0.163	349	0.216		
35	0.153	80	0.332	125	0.820	170	0.978	215	0.457	260	0.178	305	0.166	350	0.213		
36	0.156	81	0.339	126	0.833	171	0.972	216	0.444	261	0.175	306	0.169	351	0.210		
37	0.160	82	0.346	127	0.845	172	0.966	217	0.432	262	0.172	307	0.172	352	0.207		
38	0.164	83	0.354	128	0.856	173	0.960	218	0.420	263	0.168	308	0.175	353	0.204		
39	0.168	84	0.361	129	0.868	174	0.953	219	0.408	264	0.165	309	0.179	354	0.200		
40	0.172	85	0.369	130	0.879	175	0.945	220	0.397	265	0.162	310	0.182	355	0.197		
41	0.175	86	0.377	131	0.890	176	0.937	221	0.386	266	0.159	311	0.185	356	0.194		
42	0.179	87	0.385	132	0.900	177	0.929	222	0.375	267	0.156	312	0.188	357	0.191		
43	0.183	88	0.394	133	0.910	178	0.920	223	0.365	268	0.153	313	0.191	358	0.187		
44	0.187	89	0.402	134	0.919	179	0.910	224	0.356	269	0.151	314	0.194	359	0.184		

Remarks:

Date  
Call Letters  
Location  
Customer  
Antenna Type

**11-May-05**  
**WUTV**  
**Buffalo, NY**  
**TLP-16E (C)**

Exhibit 5A  
Channel **14**

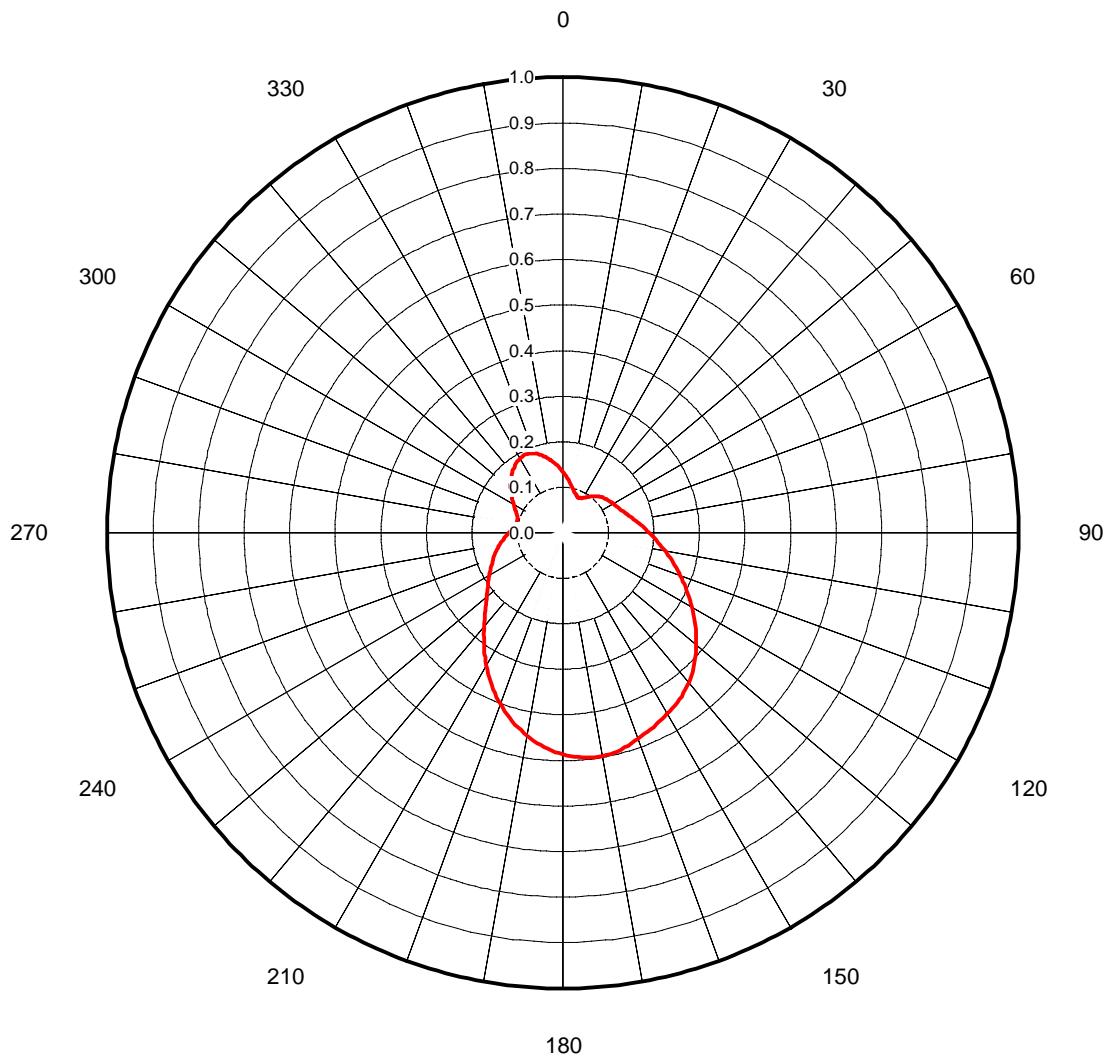
**AZIMUTH PATTERN:** **0.48° Depression Angle**

Gain  
Calculated / Measured

**Calculated**

Frequency  
Drawing #

**473.00 MHz**  
**TLP-E**



Mech. Tilt: **0.50°**  
@  
Azimuth: **120 deg**



Date  
Call Letters  
Location  
Customer  
Antenna Type

**11-May-05**  
**WUTV**  
**Buffalo, NY**  
**TLP-16E (C)**

**Exhibit 5B**  
Channel **14**

## **TABULATION OF AZIMUTH PATTERN:      0.48° Depression Angle**

Azimuth Pattern Drawing #: **TLP-E**

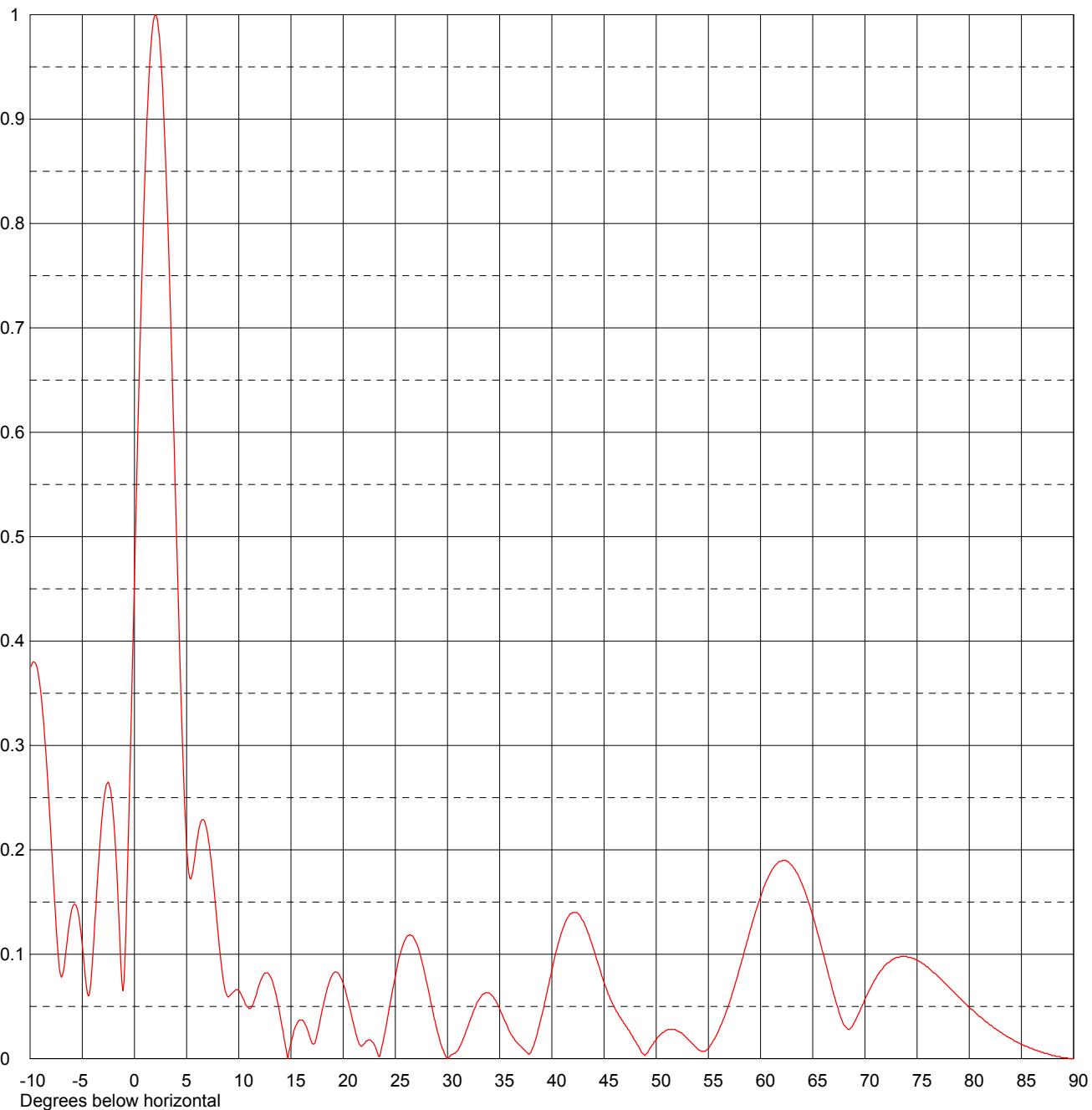
Angle	Field																
0	0.133	45	0.112	90	0.189	135	0.408	180	0.486	225	0.240	270	0.119	315	0.162		
1	0.130	46	0.114	91	0.193	136	0.412	181	0.484	226	0.236	271	0.117	316	0.164		
2	0.128	47	0.115	92	0.196	137	0.417	182	0.481	227	0.231	272	0.115	317	0.166		
3	0.125	48	0.116	93	0.200	138	0.421	183	0.478	228	0.226	273	0.114	318	0.169		
4	0.122	49	0.117	94	0.204	139	0.425	184	0.475	229	0.222	274	0.112	319	0.171		
5	0.119	50	0.119	95	0.207	140	0.429	185	0.472	230	0.218	275	0.111	320	0.173		
6	0.116	51	0.120	96	0.211	141	0.433	186	0.468	231	0.215	276	0.109	321	0.175		
7	0.113	52	0.121	97	0.215	142	0.437	187	0.464	232	0.211	277	0.108	322	0.177		
8	0.111	53	0.121	98	0.219	143	0.440	188	0.460	233	0.208	278	0.107	323	0.179		
9	0.108	54	0.122	99	0.224	144	0.443	189	0.456	234	0.204	279	0.106	324	0.180		
10	0.106	55	0.123	100	0.228	145	0.446	190	0.452	235	0.201	280	0.105	325	0.182		
11	0.103	56	0.124	101	0.232	146	0.449	191	0.448	236	0.198	281	0.105	326	0.184		
12	0.101	57	0.125	102	0.236	147	0.452	192	0.443	237	0.195	282	0.104	327	0.185		
13	0.099	58	0.126	103	0.241	148	0.454	193	0.438	238	0.192	283	0.104	328	0.186		
14	0.097	59	0.127	104	0.246	149	0.456	194	0.433	239	0.190	284	0.104	329	0.187		
15	0.095	60	0.128	105	0.250	150	0.459	195	0.428	240	0.187	285	0.104	330	0.188		
16	0.093	61	0.129	106	0.255	151	0.461	196	0.423	241	0.184	286	0.104	331	0.189		
17	0.091	62	0.130	107	0.260	152	0.463	197	0.418	242	0.182	287	0.104	332	0.190		
18	0.089	63	0.131	108	0.264	153	0.465	198	0.412	243	0.179	288	0.105	333	0.190		
19	0.088	64	0.132	109	0.269	154	0.467	199	0.407	244	0.176	289	0.106	334	0.191		
20	0.087	65	0.133	110	0.274	155	0.470	200	0.401	245	0.174	290	0.107	335	0.191		
21	0.086	66	0.134	111	0.279	156	0.472	201	0.395	246	0.172	291	0.108	336	0.190		
22	0.085	67	0.135	112	0.284	157	0.474	202	0.389	247	0.169	292	0.109	337	0.189		
23	0.085	68	0.137	113	0.289	158	0.477	203	0.382	248	0.167	293	0.111	338	0.188		
24	0.085	69	0.138	114	0.295	159	0.479	204	0.376	249	0.165	294	0.112	339	0.187		
25	0.085	70	0.140	115	0.300	160	0.481	205	0.370	250	0.162	295	0.114	340	0.186		
26	0.085	71	0.141	116	0.305	161	0.484	206	0.363	251	0.160	296	0.116	341	0.184		
27	0.086	72	0.143	117	0.310	162	0.486	207	0.356	252	0.158	297	0.118	342	0.182		
28	0.086	73	0.145	118	0.316	163	0.488	208	0.350	253	0.156	298	0.120	343	0.180		
29	0.087	74	0.147	119	0.321	164	0.491	209	0.343	254	0.153	299	0.122	344	0.178		
30	0.088	75	0.149	120	0.327	165	0.492	210	0.336	255	0.151	300	0.125	345	0.176		
31	0.090	76	0.151	121	0.332	166	0.494	211	0.329	256	0.149	301	0.127	346	0.173		
32	0.091	77	0.153	122	0.338	167	0.496	212	0.322	257	0.147	302	0.129	347	0.171		
33	0.092	78	0.155	123	0.344	168	0.497	213	0.315	258	0.144	303	0.132	348	0.168		
34	0.094	79	0.158	124	0.349	169	0.497	214	0.308	259	0.142	304	0.134	349	0.166		
35	0.096	80	0.160	125	0.355	170	0.498	215	0.302	260	0.140	305	0.137	350	0.163		
36	0.097	81	0.163	126	0.360	171	0.498	216	0.295	261	0.138	306	0.139	351	0.160		
37	0.099	82	0.165	127	0.366	172	0.497	217	0.288	262	0.135	307	0.142	352	0.157		
38	0.101	83	0.168	128	0.371	173	0.497	218	0.282	263	0.133	308	0.144	353	0.154		
39	0.103	84	0.171	129	0.377	174	0.496	219	0.275	264	0.131	309	0.147	354	0.151		
40	0.104	85	0.174	130	0.382	175	0.495	220	0.269	265	0.129	310	0.149	355	0.148		
41	0.106	86	0.177	131	0.388	176	0.494	221	0.263	266	0.127	311	0.152	356	0.145		
42	0.108	87	0.180	132	0.393	177	0.492	222	0.257	267	0.125	312	0.154	357	0.142		
43	0.109	88	0.183	133	0.398	178	0.490	223	0.251	268	0.123	313	0.157	358	0.139		
44	0.111	89	0.186	134	0.403	179	0.488	224	0.246	269	0.121	314	0.159	359	0.136		



Date **23 Jun 2005**  
 Call Letters **WUTV-DT** Channel **14**  
 Location **Buffalo, NY**  
 Customer **WUTV Licensee**  
 Antenna Type **TLP-16E (C)**

### ELEVATION PATTERN

RMS Gain at Main Lobe	<b>15.0 (11.76 dB)</b>	Beam Tilt	<b>2.00 Degrees (Gain = 12.76 dB)</b>
RMS Gain at Horizontal	<b>3.2 (5.05 dB)</b>	Frequency	<b>473.00 MHz</b>
Calculated / Measured	<b>Calculated</b>	Drawing #	<b>16L150200-90</b>



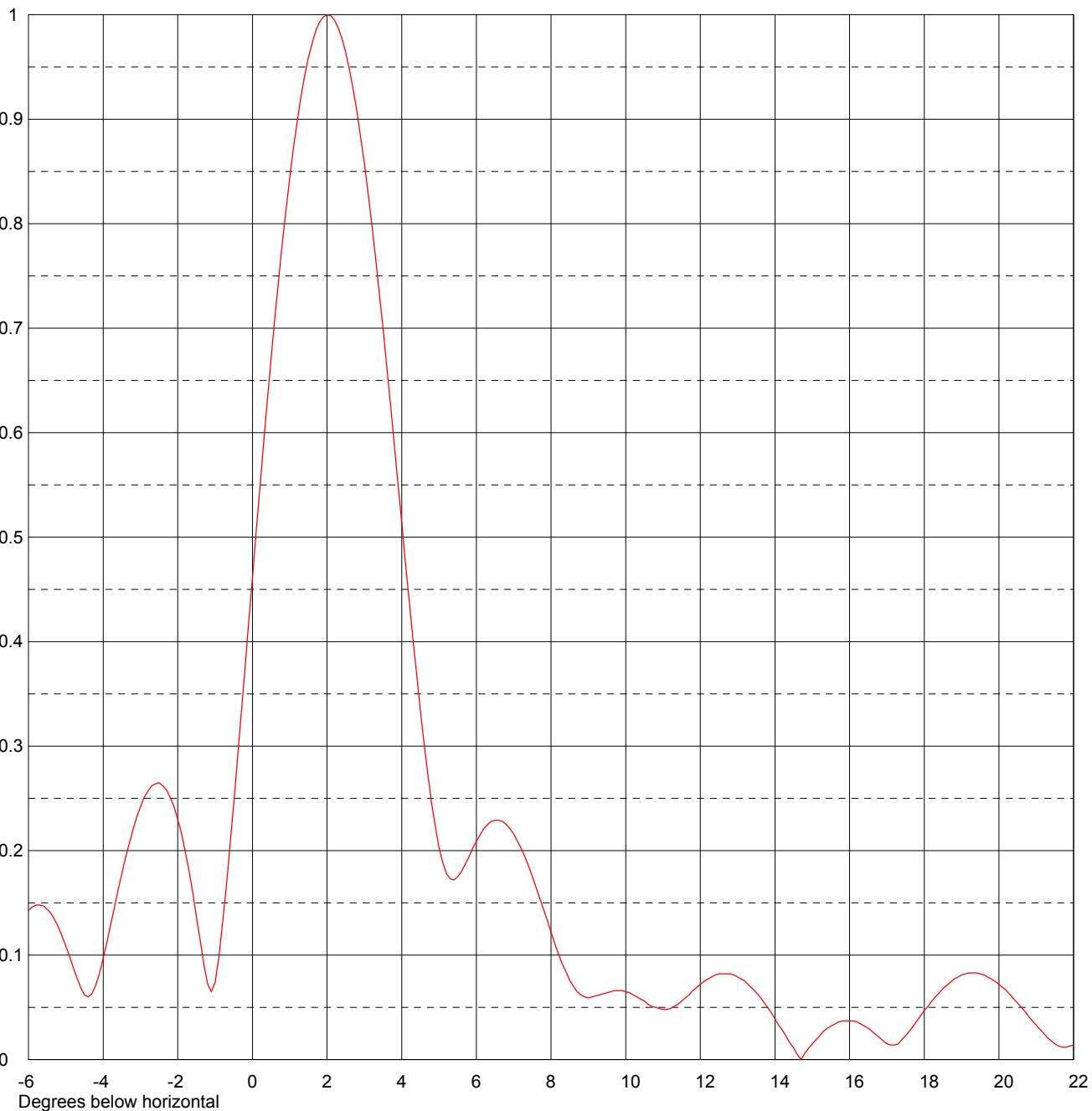
Remarks:



Date	<b>23 Jun 2005</b>
Call Letters	<b>WUTV-DT</b>
Location	<b>Buffalo, NY</b>
Customer	<b>WUTV Licensee</b>
Antenna Type	<b>TLP-16E (C)</b>

### ELEVATION PATTERN

RMS Gain at Main Lobe	<b>15.0 (11.76 dB)</b>	Beam Tilt	<b>2.00 Degrees (Gain = 12.76 dB)</b>
RMS Gain at Horizontal	<b>3.2 (5.05 dB)</b>	Frequency	<b>473.00 MHz</b>
Calculated / Measured	<b>Calculated</b>	Drawing #	<b>16L150200</b>



Remarks:



Exhibit No.

7

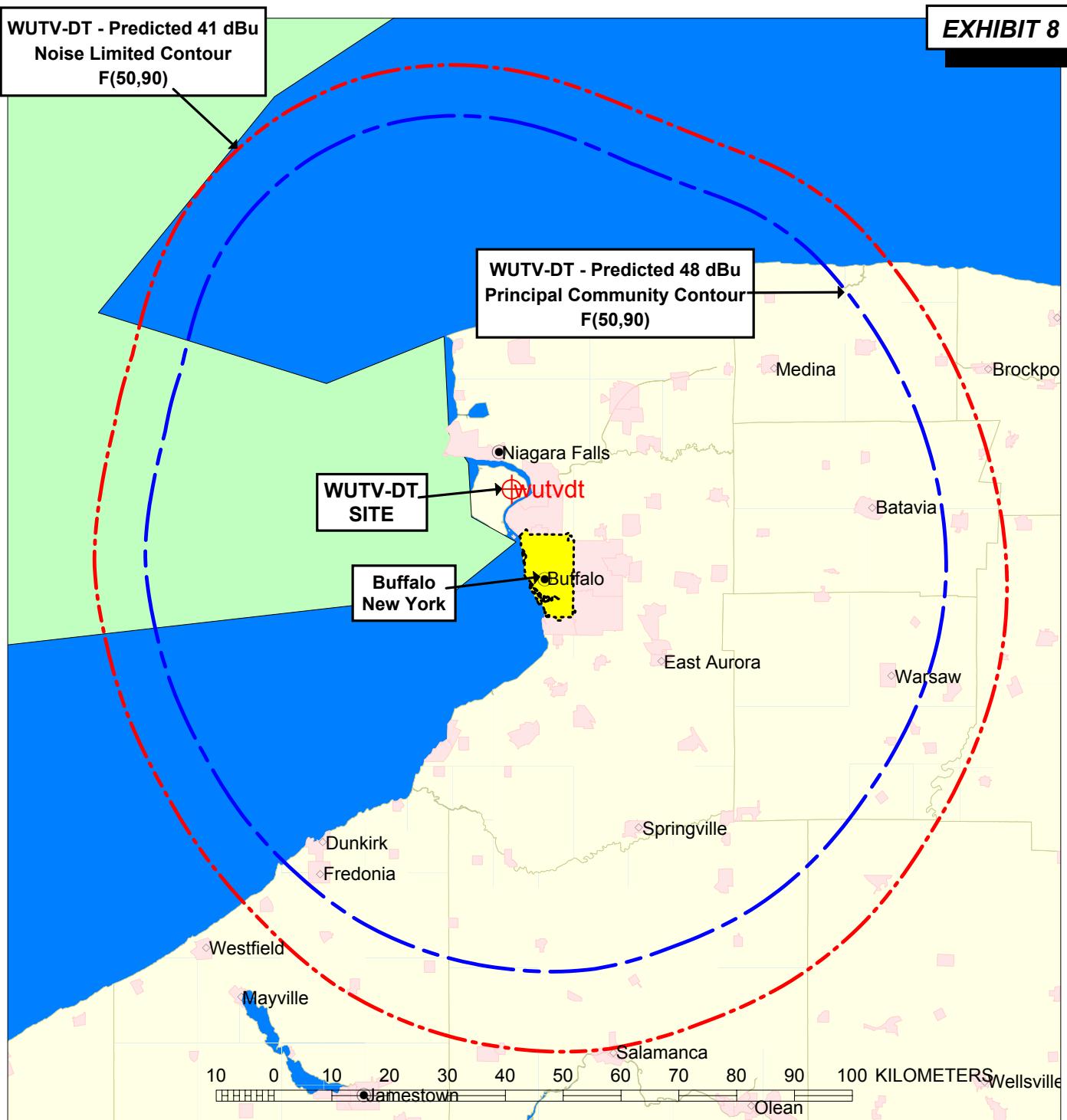
Date **23 Jun 2005**  
Call Letters **WUTV-DT** Channel **14**  
Location **Buffalo, NY**  
Customer **WUTV Licensee**  
Antenna Type **TLP-16E (C)**

### TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing # **16L150200**

Angle	Field												
-10.0	0.372	2.4	0.977	10.6	0.053	30.5	0.004	51.0	0.027	71.5	0.084		
-9.5	0.379	2.6	0.947	10.8	0.050	31.0	0.008	51.5	0.028	72.0	0.090		
-9.0	0.353	2.8	0.907	11.0	0.048	31.5	0.019	52.0	0.027	72.5	0.094		
-8.5	0.295	3.0	0.857	11.5	0.056	32.0	0.032	52.5	0.024	73.0	0.097		
-8.0	0.213	3.2	0.799	12.0	0.072	32.5	0.046	53.0	0.019	73.5	0.098		
-7.5	0.126	3.4	0.734	12.5	0.082	33.0	0.056	53.5	0.014	74.0	0.098		
-7.0	0.078	3.6	0.663	13.0	0.079	33.5	0.062	54.0	0.009	74.5	0.096		
-6.5	0.108	3.8	0.589	13.5	0.064	34.0	0.063	54.5	0.007	75.0	0.094		
-6.0	0.143	4.0	0.514	14.0	0.039	34.5	0.057	55.0	0.010	75.5	0.091		
-5.5	0.144	4.2	0.439	14.5	0.011	35.0	0.048	55.5	0.018	76.0	0.088		
-5.0	0.109	4.4	0.368	15.0	0.015	35.5	0.036	56.0	0.027	76.5	0.083		
-4.5	0.062	4.6	0.302	15.5	0.032	36.0	0.025	56.5	0.039	77.0	0.079		
-4.0	0.097	4.8	0.246	16.0	0.037	36.5	0.017	57.0	0.053	77.5	0.074		
-3.5	0.178	5.0	0.203	16.5	0.030	37.0	0.012	57.5	0.069	78.0	0.069		
-3.0	0.242	5.2	0.178	17.0	0.015	37.5	0.007	58.0	0.087	78.5	0.064		
-2.8	0.257	5.4	0.172	17.5	0.023	38.0	0.006	58.5	0.105	79.0	0.059		
-2.6	0.264	5.6	0.180	18.0	0.047	38.5	0.020	59.0	0.123	79.5	0.054		
-2.4	0.262	5.8	0.194	18.5	0.068	39.0	0.040	59.5	0.140	80.0	0.049		
-2.2	0.251	6.0	0.209	19.0	0.081	39.5	0.062	60.0	0.155	80.5	0.045		
-2.0	0.230	6.2	0.221	19.5	0.082	40.0	0.085	60.5	0.169	81.0	0.040		
-1.8	0.199	6.4	0.228	20.0	0.072	40.5	0.106	61.0	0.179	81.5	0.036		
-1.6	0.160	6.6	0.229	20.5	0.054	41.0	0.123	61.5	0.186	82.0	0.032		
-1.4	0.114	6.8	0.225	21.0	0.033	41.5	0.135	62.0	0.189	82.5	0.029		
-1.2	0.072	7.0	0.216	21.5	0.015	42.0	0.140	62.5	0.189	83.0	0.025		
-1.0	0.074	7.2	0.202	22.0	0.014	42.5	0.139	63.0	0.185	83.5	0.022		
-0.8	0.130	7.4	0.185	22.5	0.018	43.0	0.132	63.5	0.178	84.0	0.019		
-0.6	0.205	7.6	0.165	23.0	0.013	43.5	0.120	64.0	0.167	84.5	0.016		
-0.4	0.288	7.8	0.144	23.5	0.002	44.0	0.105	64.5	0.153	85.0	0.014		
-0.2	0.374	8.0	0.122	24.0	0.025	44.5	0.089	65.0	0.137	85.5	0.012		
0.0	0.461	8.2	0.101	24.5	0.053	45.0	0.073	65.5	0.119	86.0	0.010		
0.2	0.548	8.4	0.084	25.0	0.079	45.5	0.060	66.0	0.101	86.5	0.008		
0.4	0.631	8.6	0.070	25.5	0.101	46.0	0.049	66.5	0.081	87.0	0.006		
0.6	0.709	8.8	0.062	26.0	0.115	46.5	0.040	67.0	0.062	87.5	0.005		
0.8	0.781	9.0	0.059	26.5	0.118	47.0	0.033	67.5	0.045	88.0	0.003		
1.0	0.844	9.2	0.061	27.0	0.111	47.5	0.025	68.0	0.032	88.5	0.002		
1.2	0.898	9.4	0.063	27.5	0.095	48.0	0.017	68.5	0.028	89.0	0.001		
1.4	0.942	9.6	0.065	28.0	0.073	48.5	0.008	69.0	0.035	89.5	0.000		
1.6	0.973	9.8	0.066	28.5	0.050	49.0	0.004	69.5	0.045	90.0	0.000		
1.8	0.993	10.0	0.065	29.0	0.027	49.5	0.011	70.0	0.057				
2.0	1.000	10.2	0.062	29.5	0.010	50.0	0.018	70.5	0.067				
2.2	0.995	10.4	0.058	30.0	0.000	50.5	0.024	71.0	0.076				

Remarks:



**PREDICTED COVERAGE CONTOURS**  
**WUTV-DT - BUFFALO, NEW YORK**  
**CH. 14 - 1000 kW - 299.5 m HAAT**  
**Antenna Beam Tilt >1.5 degrees**

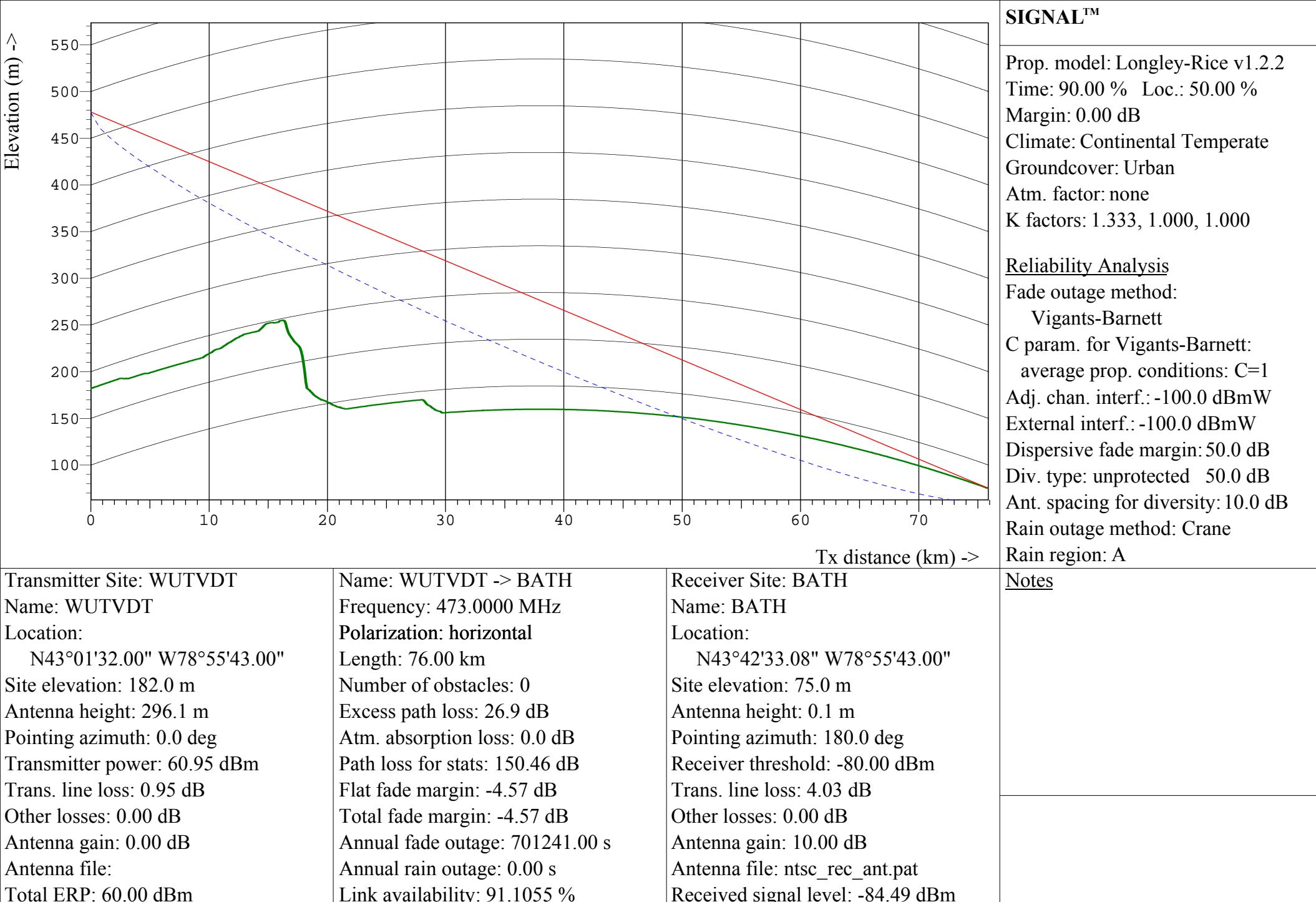
41 dBu - Noise Limited Contour

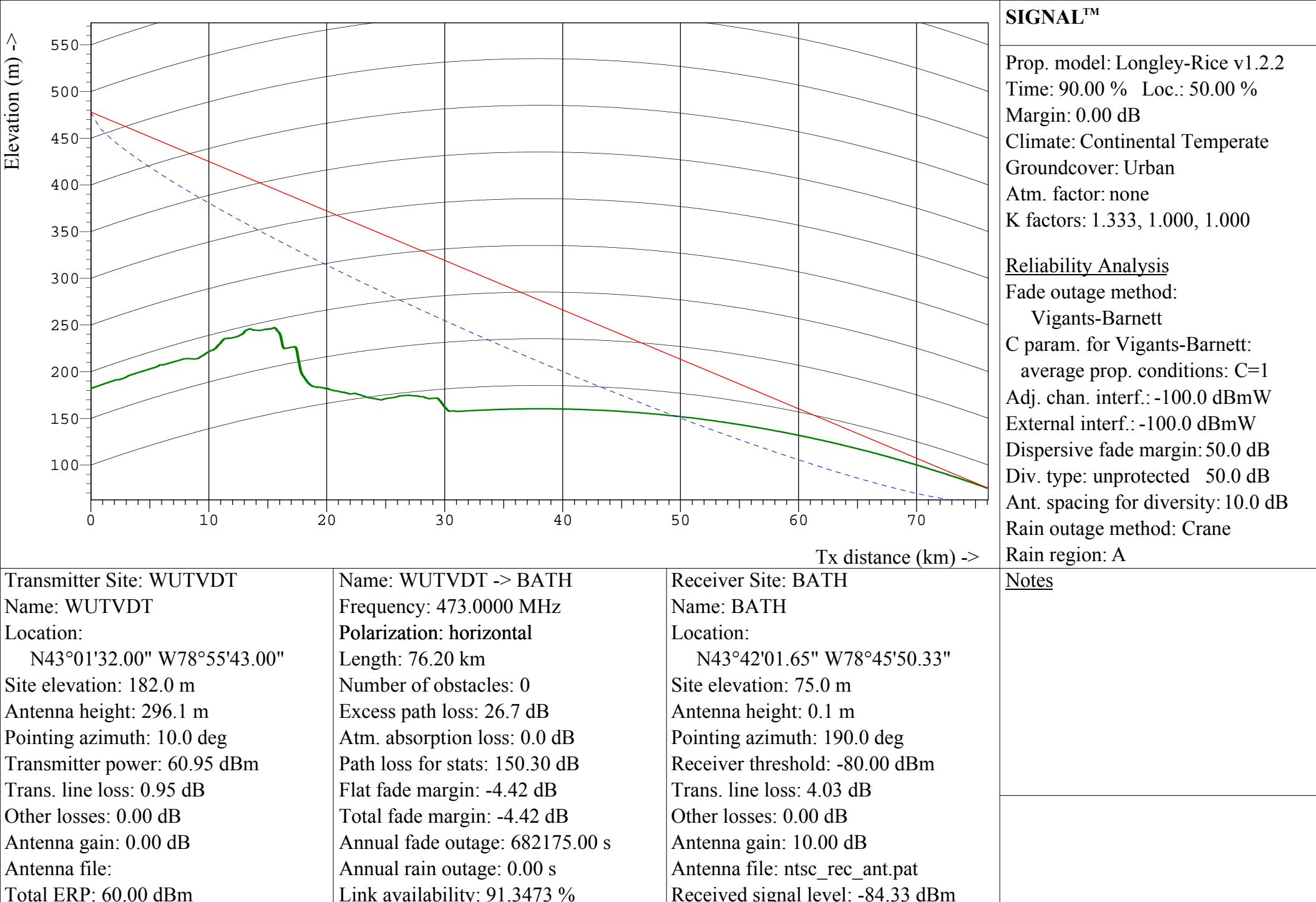
48 dBu - Principal Community Contour

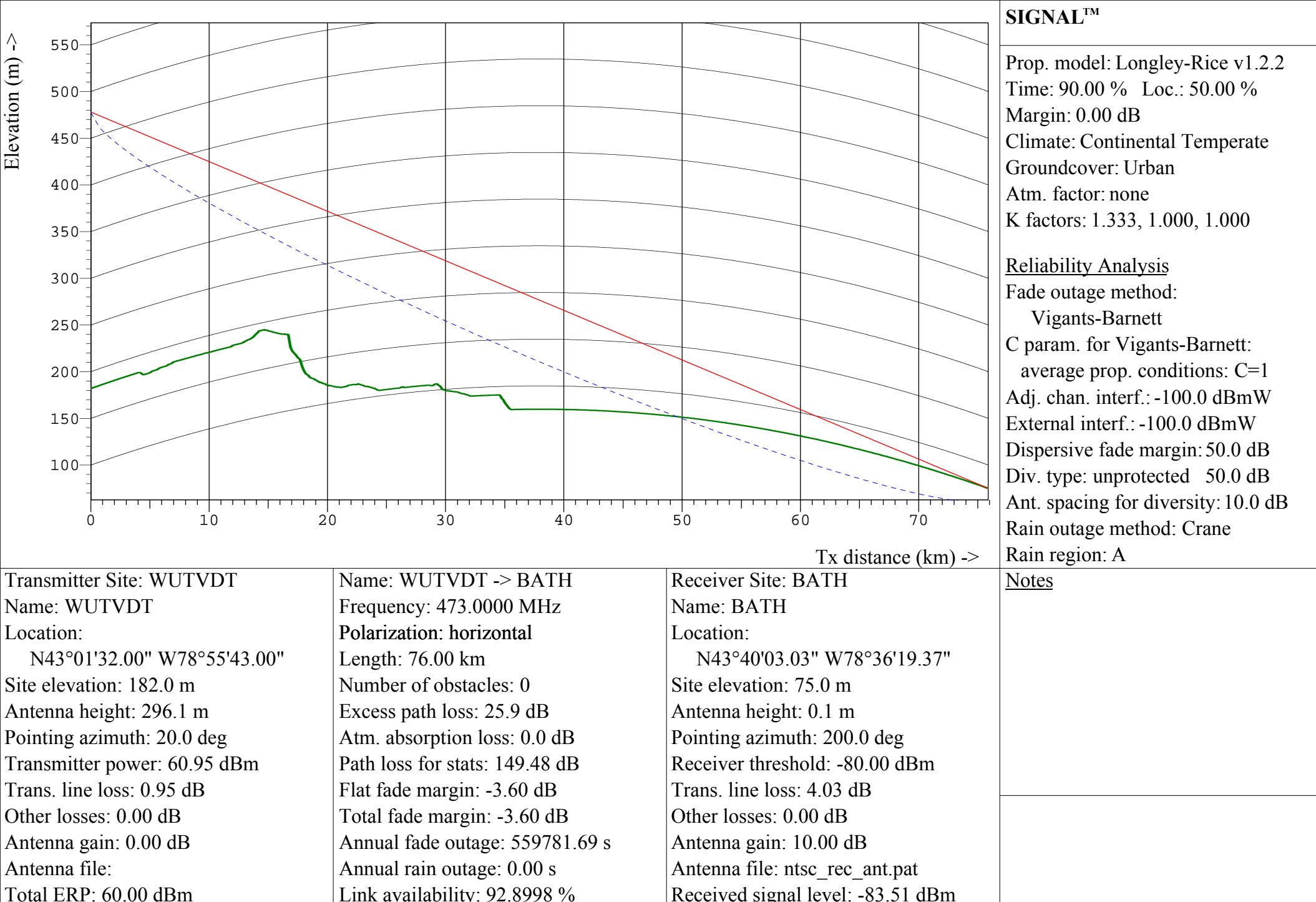
JUNE 2005

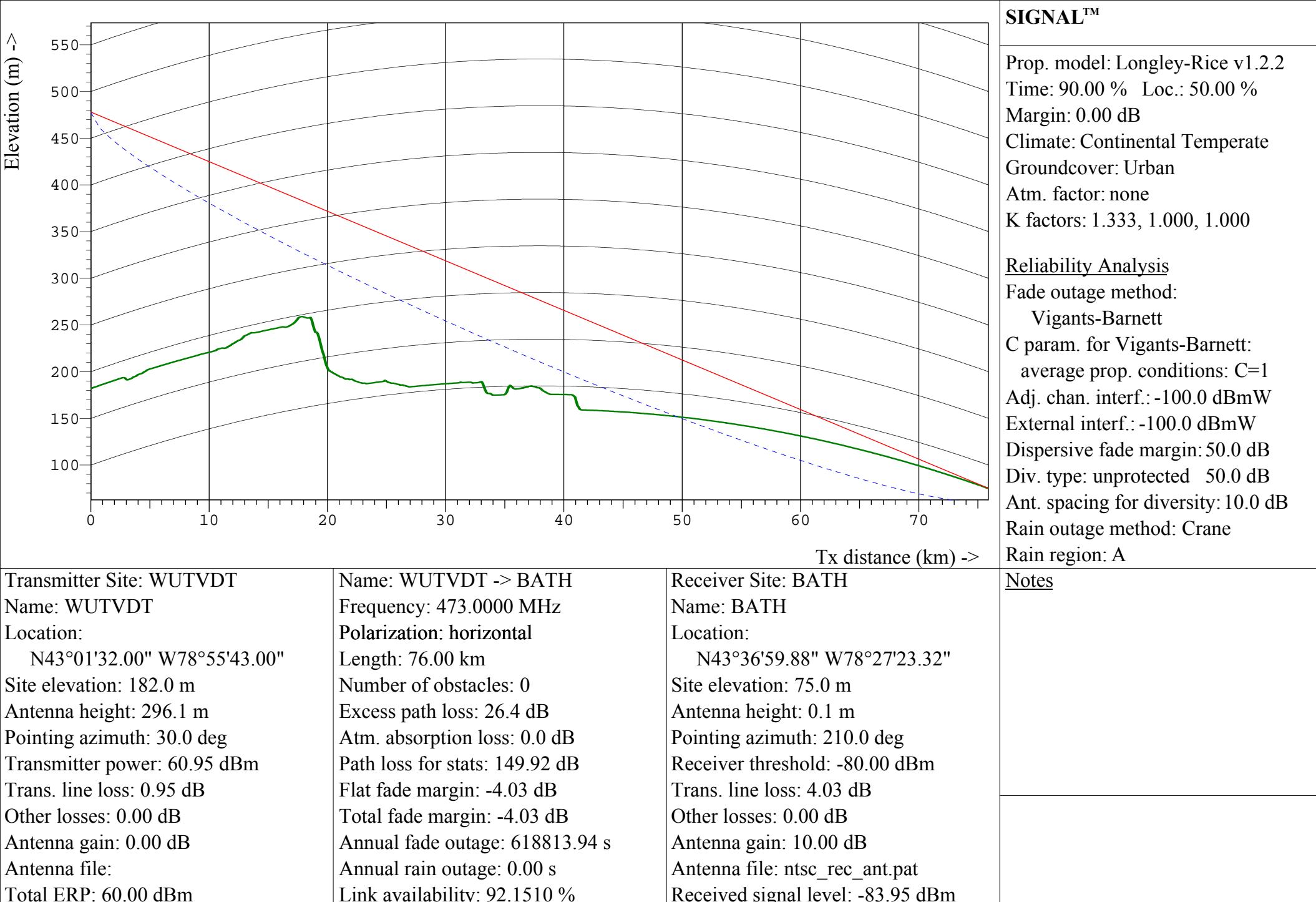
CARL T. JONES  
CORPORATION

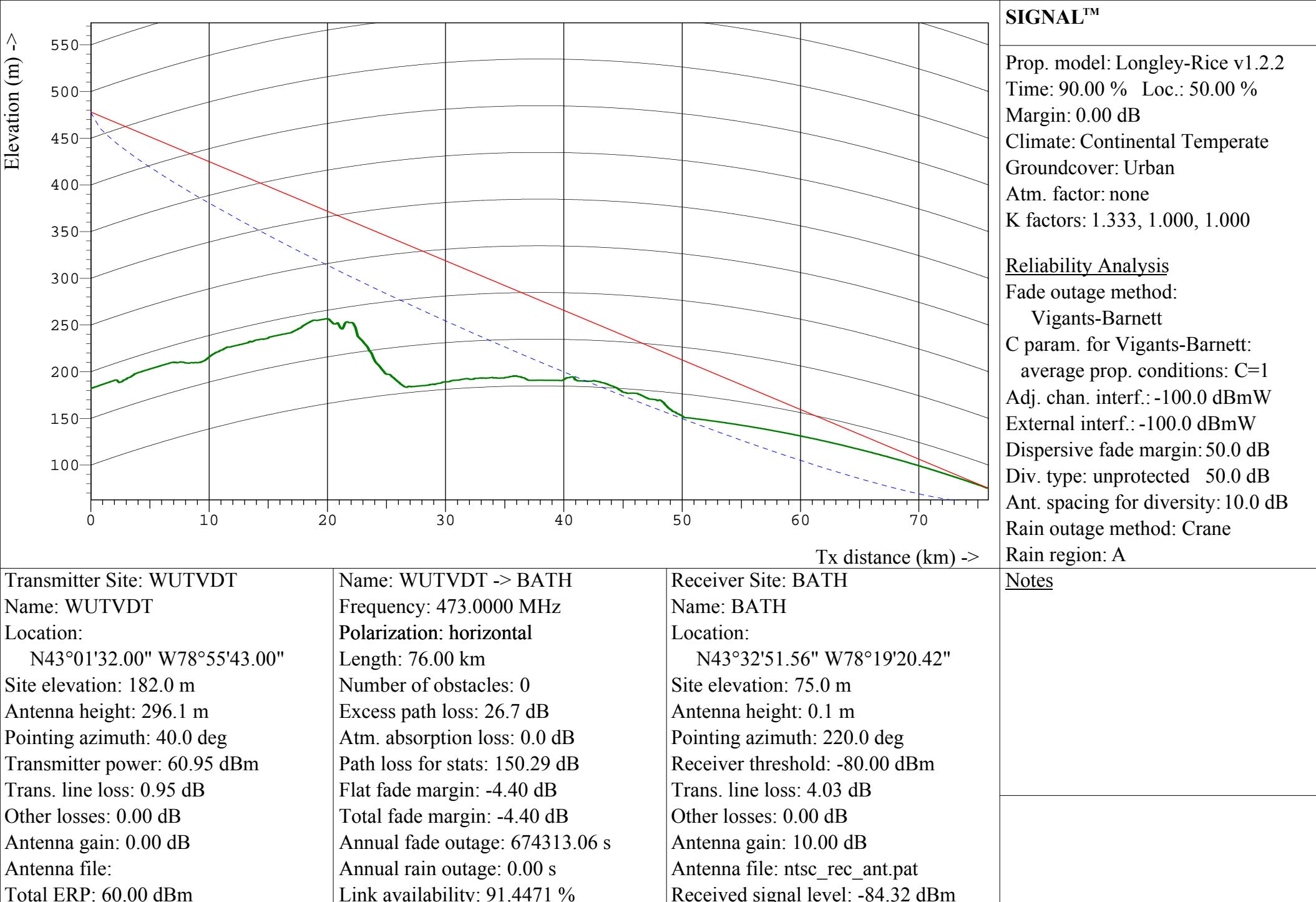
# **APPENDIX A**

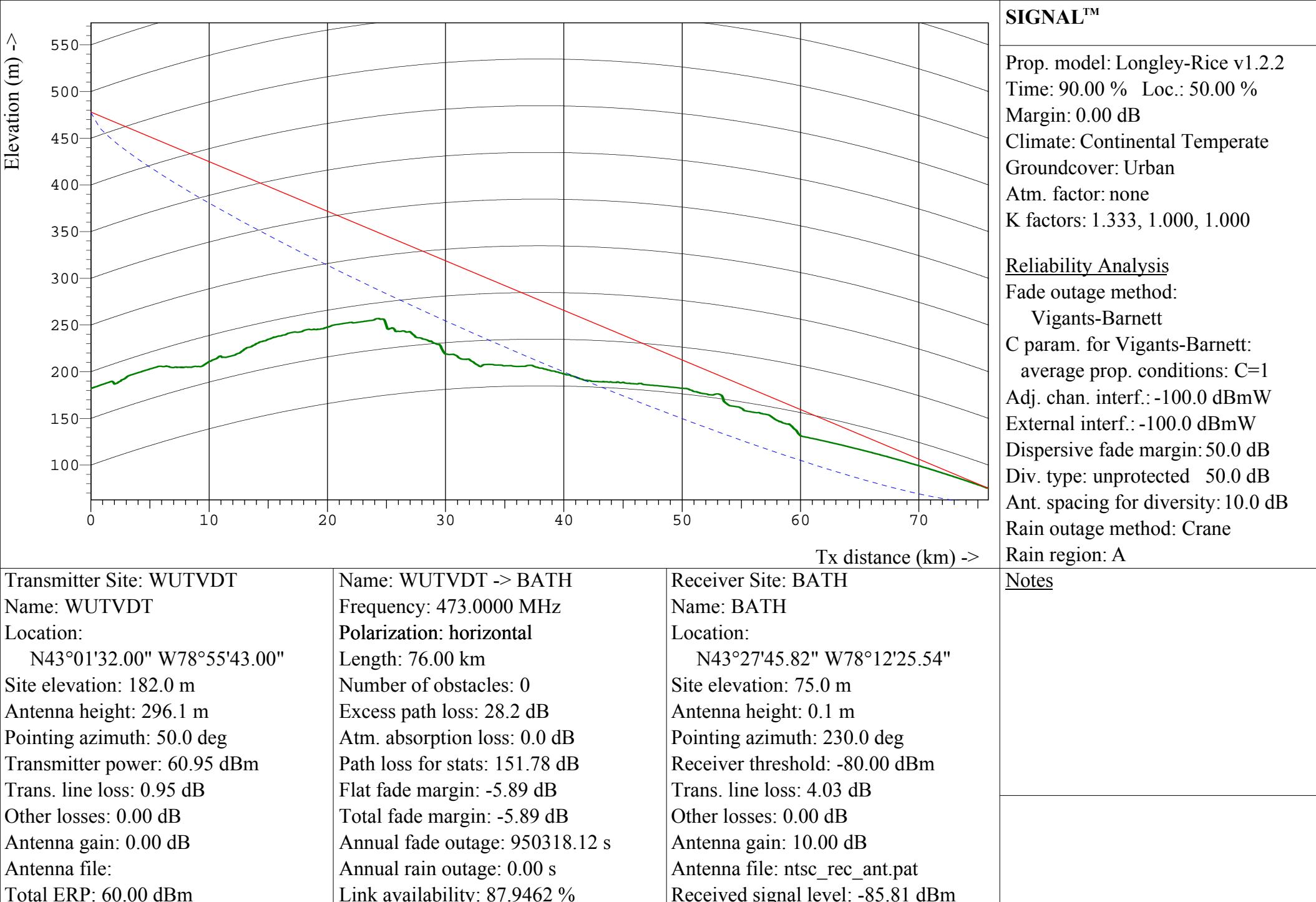


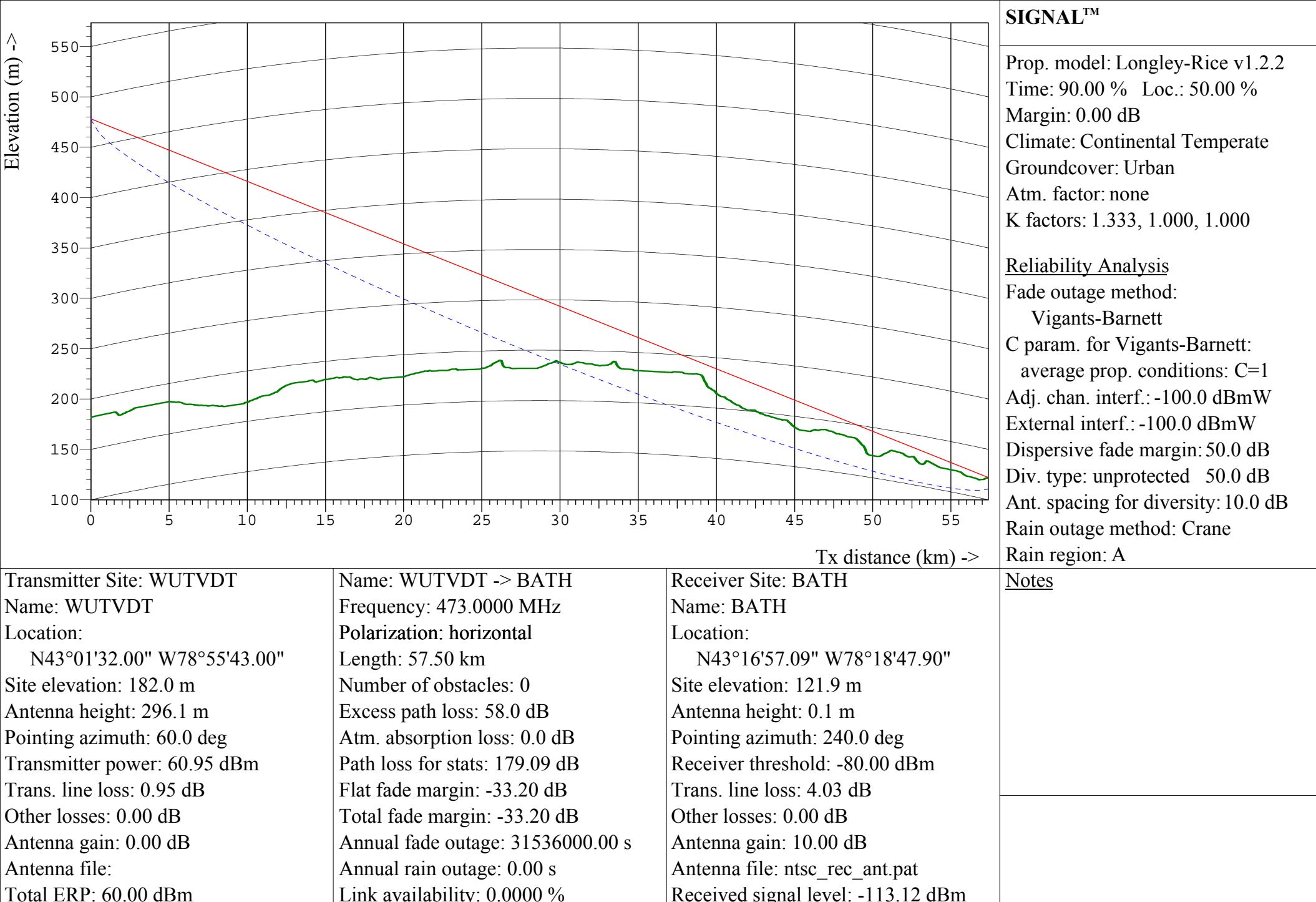


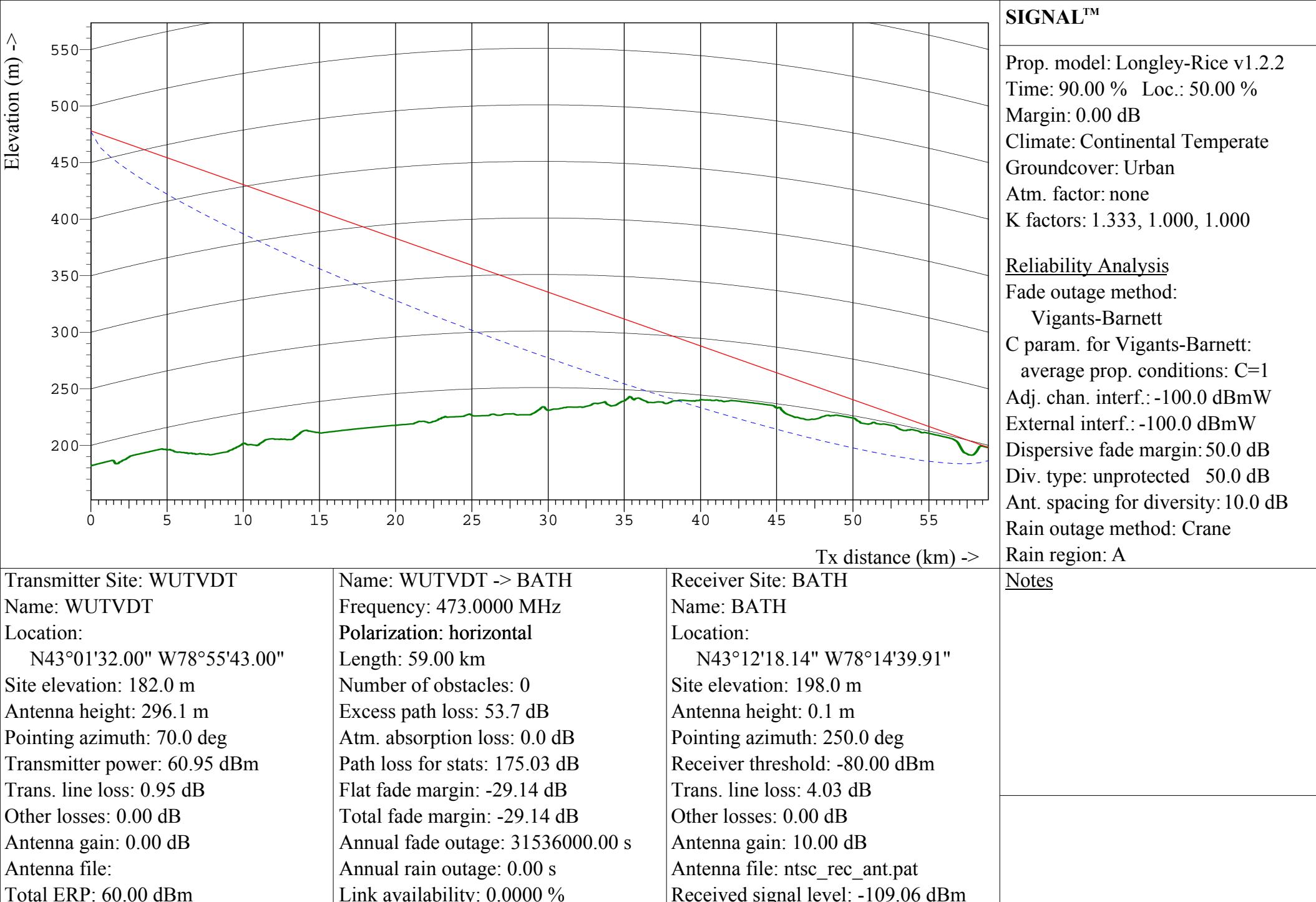


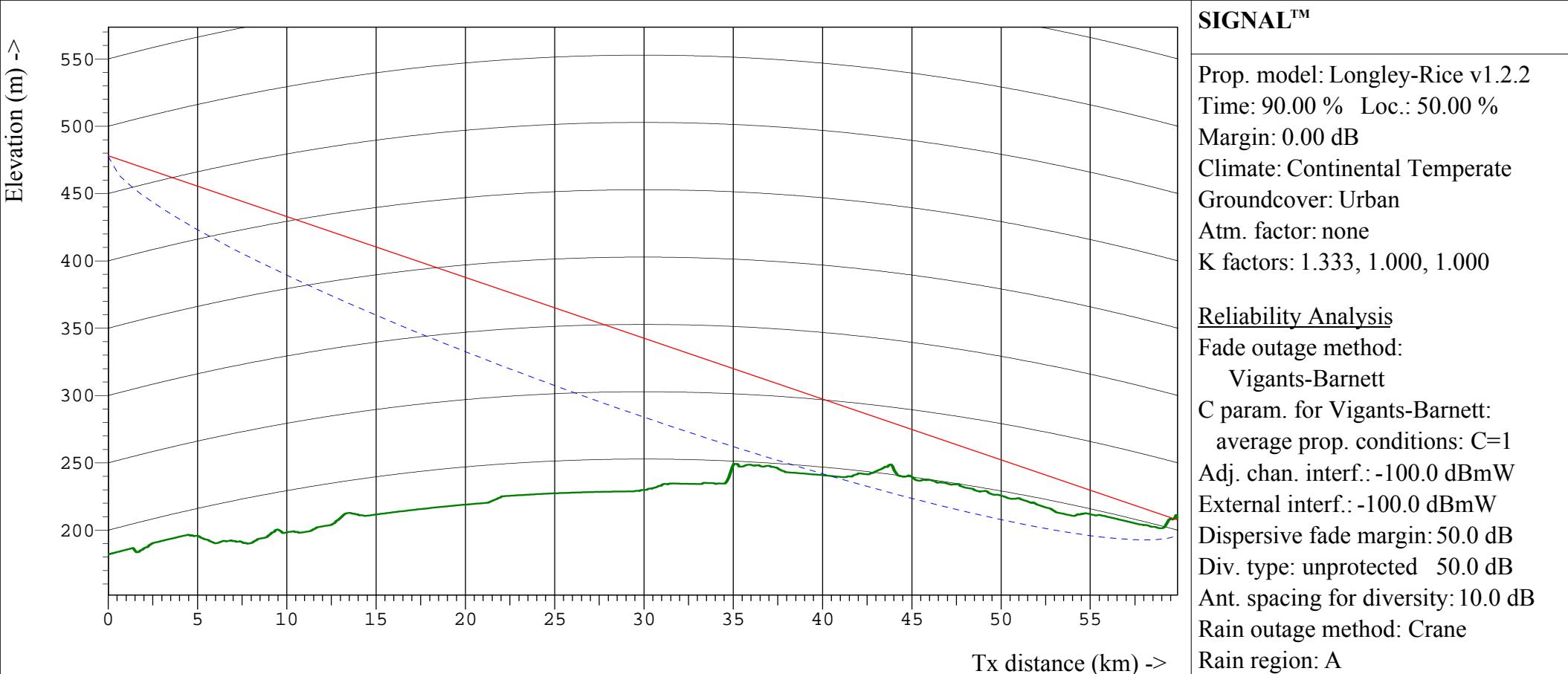




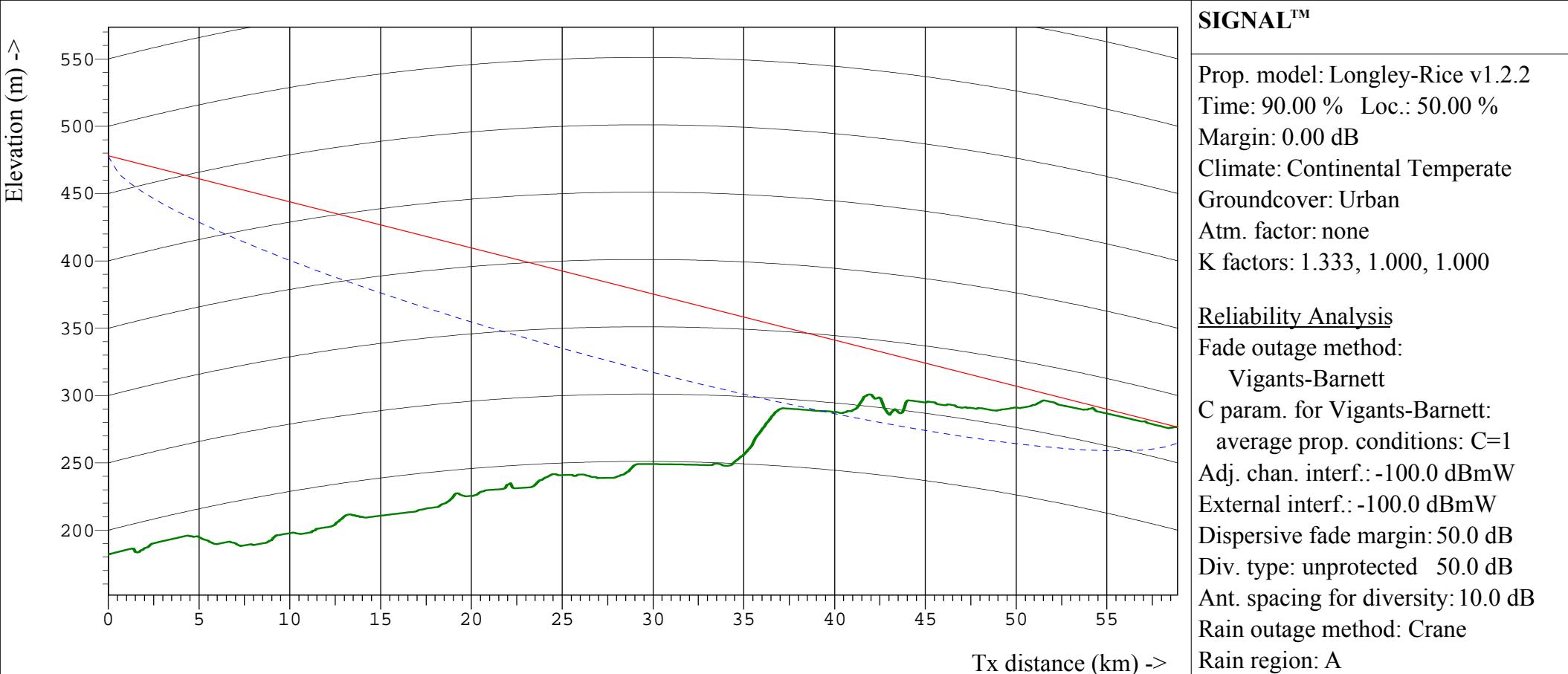








Transmitter Site: WUTVDT Name: WUTVDT Location: N43°01'32.00" W78°55'43.00" Site elevation: 182.0 m Antenna height: 296.1 m Pointing azimuth: 80.0 deg Transmitter power: 60.95 dBm Trans. line loss: 0.95 dB Other losses: 0.00 dB Antenna gain: 0.00 dB Antenna file: Total ERP: 60.00 dBm	Name: WUTVDT -> BATH Frequency: 473.0000 MHz Polarization: horizontal Length: 60.00 km Number of obstacles: 0 Excess path loss: 27.5 dB Atm. absorption loss: 0.0 dB Path loss for stats: 149.01 dB Flat fade margin: -3.13 dB Total fade margin: -3.13 dB Annual fade outage: 247040.03 s Annual rain outage: 0.00 s Link availability: 96.8666 %	Receiver Site: BATH Name: BATH Location: N43°07'01.09" W78°12'01.67" Site elevation: 207.5 m Antenna height: 0.1 m Pointing azimuth: 260.0 deg Receiver threshold: -80.00 dBm Trans. line loss: 4.03 dB Other losses: 0.00 dB Antenna gain: 10.00 dB Antenna file: ntsc_rec_ant.pat Received signal level: -83.04 dBm	<u>Notes</u>
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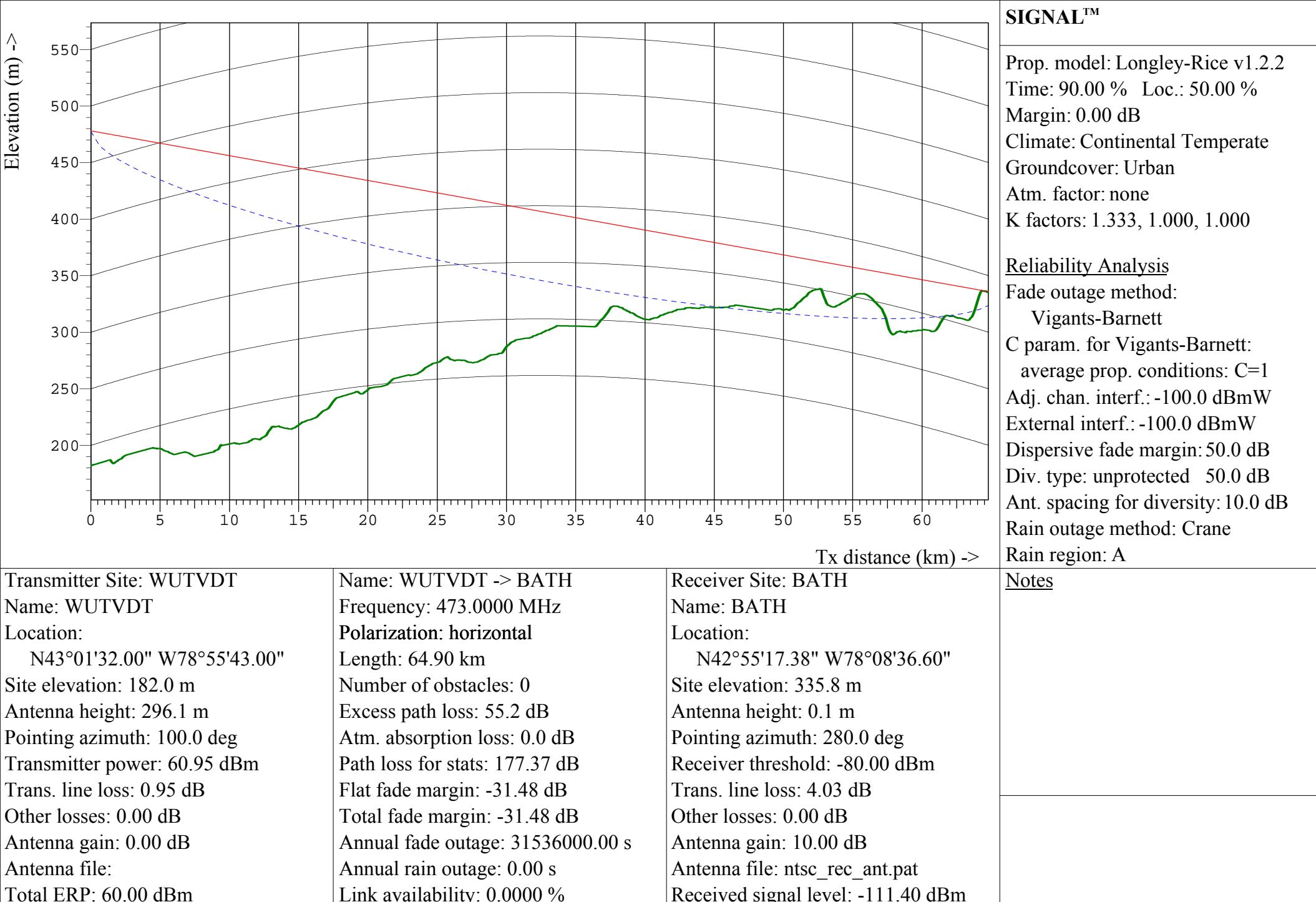
**SIGNAL™**

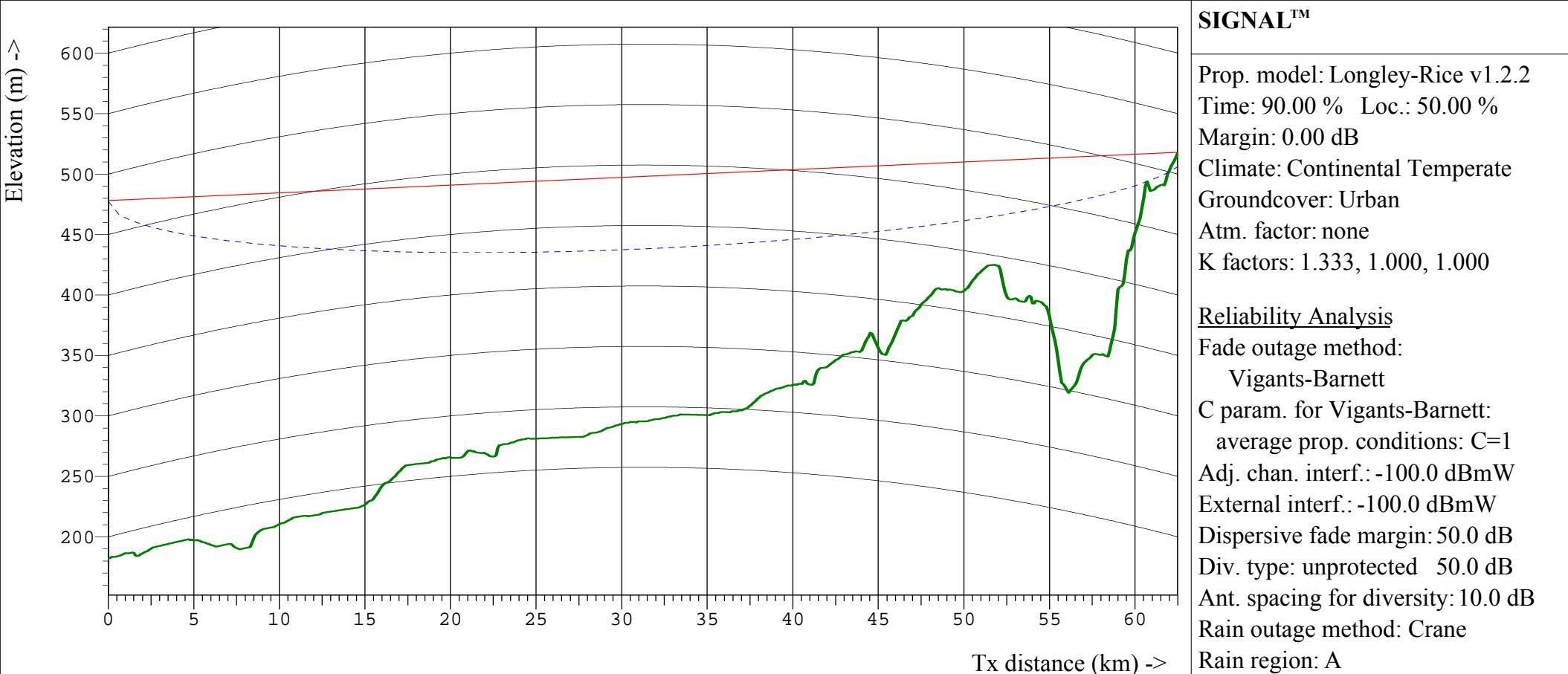
Prop. model: Longley-Rice v1.2.2  
 Time: 90.00 % Loc.: 50.00 %  
 Margin: 0.00 dB  
 Climate: Continental Temperate  
 Groundcover: Urban  
 Atm. factor: none  
 K factors: 1.333, 1.000, 1.000

#### Reliability Analysis

Fade outage method:  
 Vigants-Barnett  
 C param. for Vigants-Barnett:  
     average prop. conditions: C=1  
 Adj. chan. interf.: -100.0 dBmW  
 External interf.: -100.0 dBmW  
 Dispersive fade margin: 50.0 dB  
 Div. type: unprotected 50.0 dB  
 Ant. spacing for diversity: 10.0 dB  
 Rain outage method: Crane  
 Rain region: A

Transmitter Site: WUTVDT Name: WUTVDT Location: N43°01'32.00" W78°55'43.00" Site elevation: 182.0 m Antenna height: 296.1 m Pointing azimuth: 90.0 deg Transmitter power: 60.95 dBm Trans. line loss: 0.95 dB Other losses: 0.00 dB Antenna gain: 0.00 dB Antenna file: Total ERP: 60.00 dBm	Name: WUTVDT -> BATH Frequency: 473.0000 MHz Polarization: horizontal Length: 59.00 km Number of obstacles: 0 Excess path loss: 53.7 dB Atm. absorption loss: 0.0 dB Path loss for stats: 175.03 dB Flat fade margin: -29.14 dB Total fade margin: -29.14 dB Annual fade outage: 31536000.00 s Annual rain outage: 0.00 s Link availability: 0.0000 %	Receiver Site: BATH Name: BATH Location: N43°01'23.74" W78°12'09.59" Site elevation: 276.3 m Antenna height: 0.1 m Pointing azimuth: 270.0 deg Receiver threshold: -80.00 dBm Trans. line loss: 4.03 dB Other losses: 0.00 dB Antenna gain: 10.00 dB Antenna file: ntsc_rec_ant.pat Received signal level: -109.06 dBm	Notes
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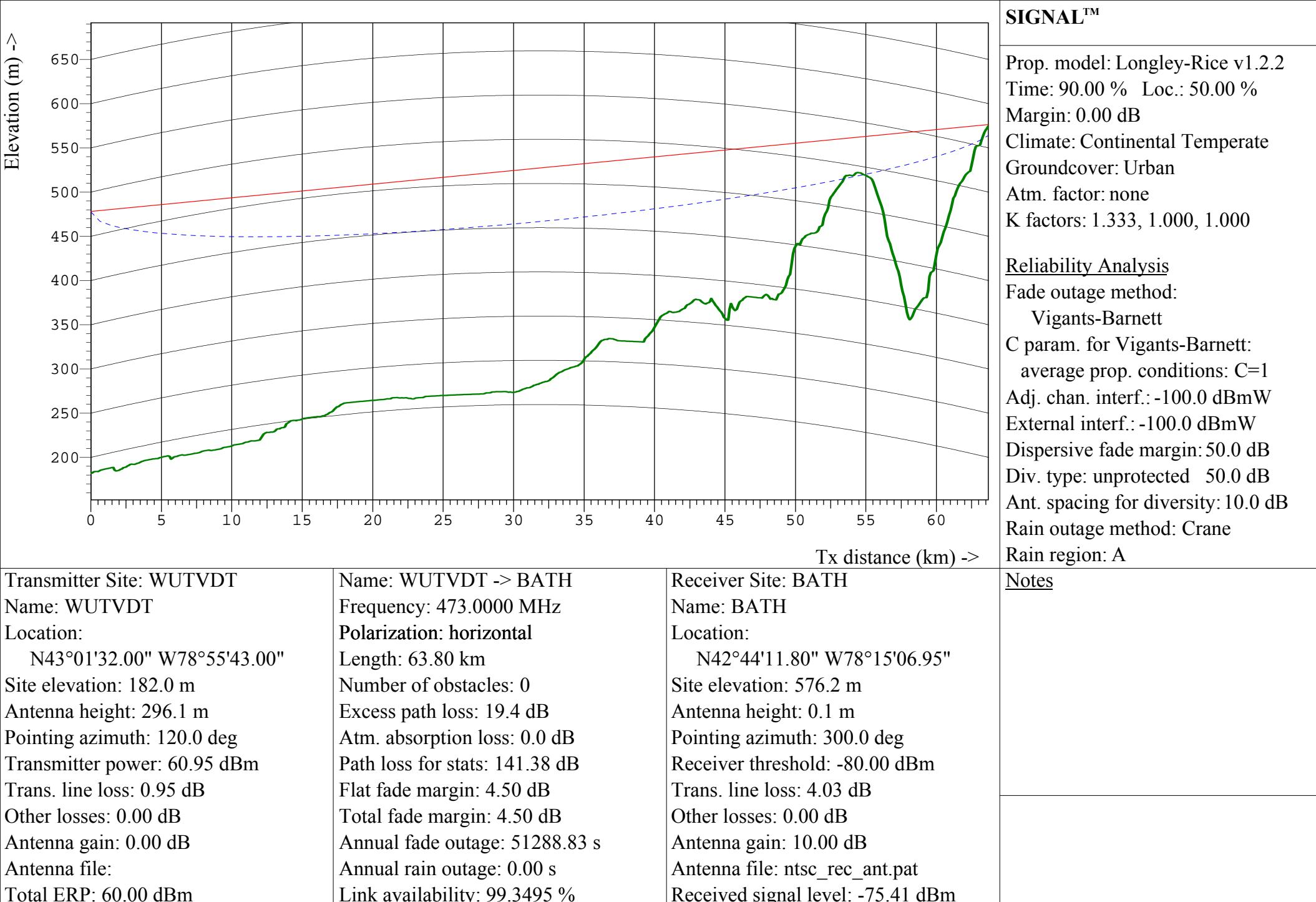
SIGNAL™

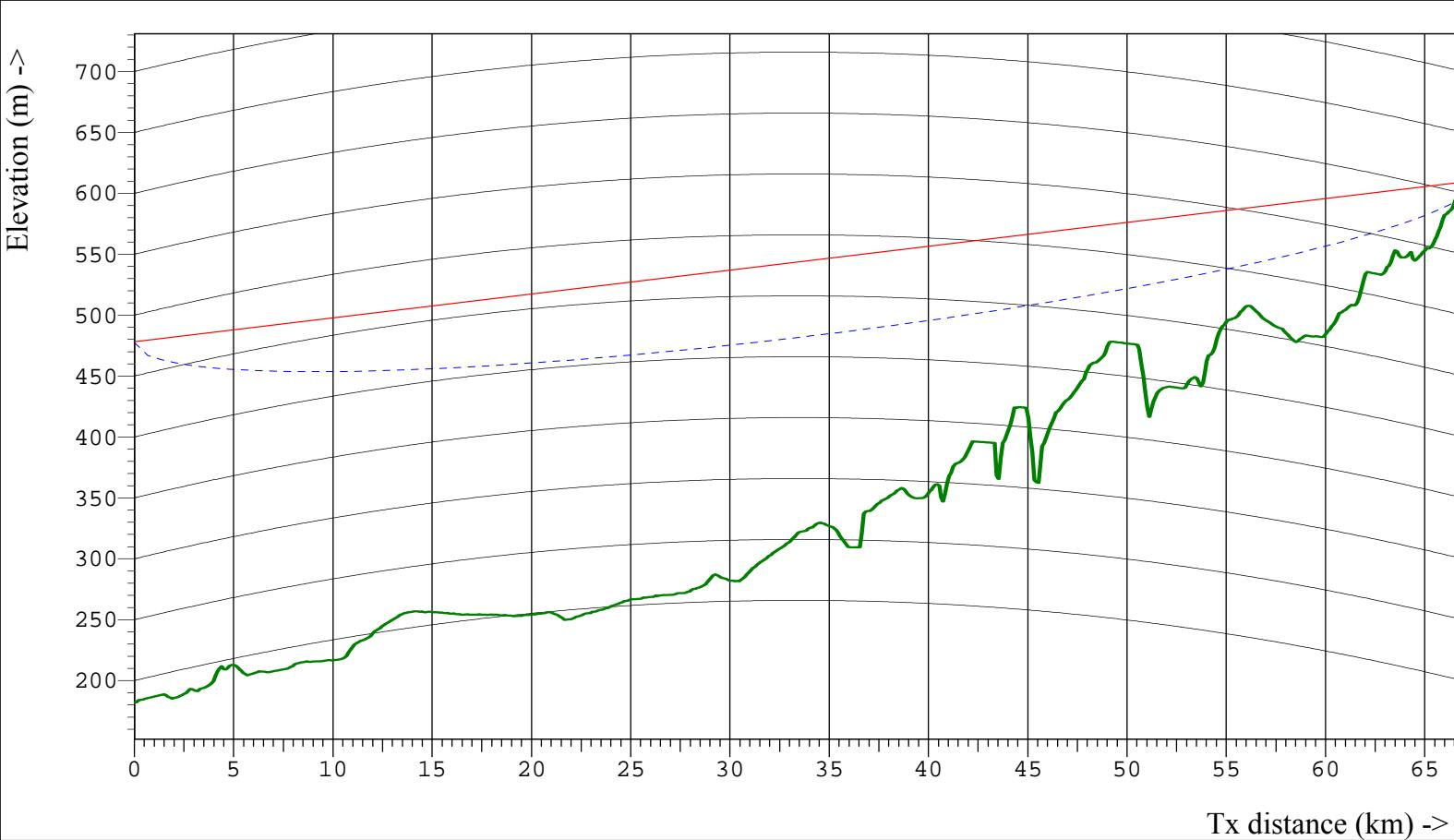
Prop. model: Longley-Rice v1.2.2  
 Time: 90.00 % Loc.: 50.00 %  
 Margin: 0.00 dB  
 Climate: Continental Temperate  
 Groundcover: Urban  
 Atm. factor: none  
 K factors: 1.333, 1.000, 1.000

#### Reliability Analysis

Fade outage method:  
 Vigants-Barnett  
 C param. for Vigants-Barnett:  
 average prop. conditions: C=1  
 Adj. chan. interf.: -100.0 dBmW  
 External interf.: -100.0 dBmW  
 Dispersive fade margin: 50.0 dB  
 Div. type: unprotected 50.0 dB  
 Ant. spacing for diversity: 10.0 dB  
 Rain outage method: Crane  
 Rain region: A

Transmitter Site: WUTVDT Name: WUTVDT Location: N43°01'32.00" W78°55'43.00" Site elevation: 182.0 m Antenna height: 296.1 m Pointing azimuth: 110.0 deg Transmitter power: 60.95 dBm Trans. line loss: 0.95 dB Other losses: 0.00 dB Antenna gain: 0.00 dB Antenna file: Total ERP: 60.00 dBm	Name: WUTVDT -> BATH Frequency: 473.0000 MHz Polarization: horizontal Length: 62.60 km Number of obstacles: 0 Excess path loss: 19.5 dB Atm. absorption loss: 0.0 dB Path loss for stats: 141.36 dB Flat fade margin: 4.52 dB Total fade margin: 4.52 dB Annual fade outage: 48213.75 s Annual rain outage: 0.00 s Link availability: 99.3885 %	Receiver Site: BATH Name: BATH Location: N42°49'50.51" W78°12'25.49" Site elevation: 518.0 m Antenna height: 0.1 m Pointing azimuth: 290.0 deg Receiver threshold: -80.00 dBm Trans. line loss: 4.03 dB Other losses: 0.00 dB Antenna gain: 10.00 dB Antenna file: ntsc_rec_ant.pat Received signal level: -75.39 dBm	<u>Notes</u>
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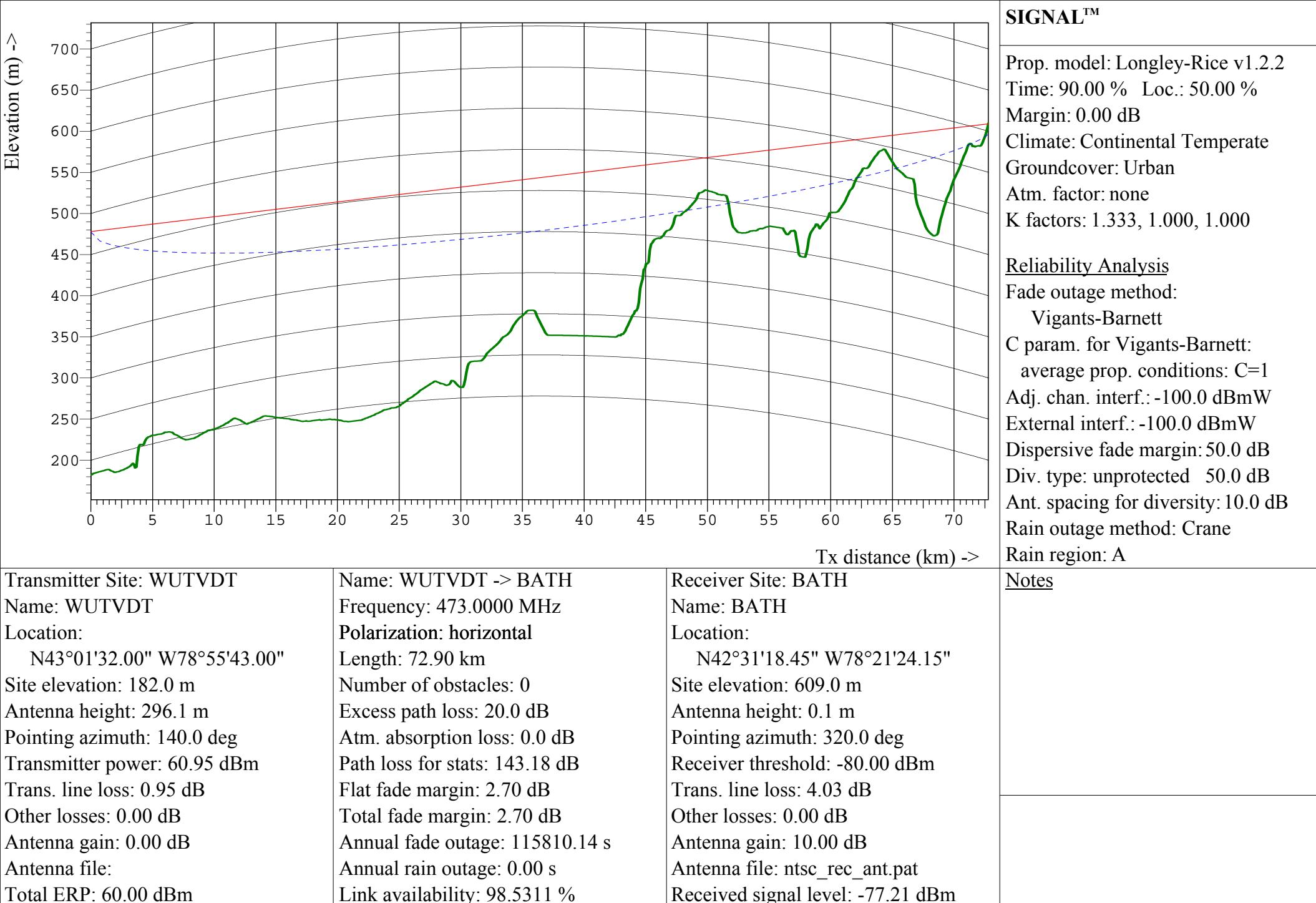


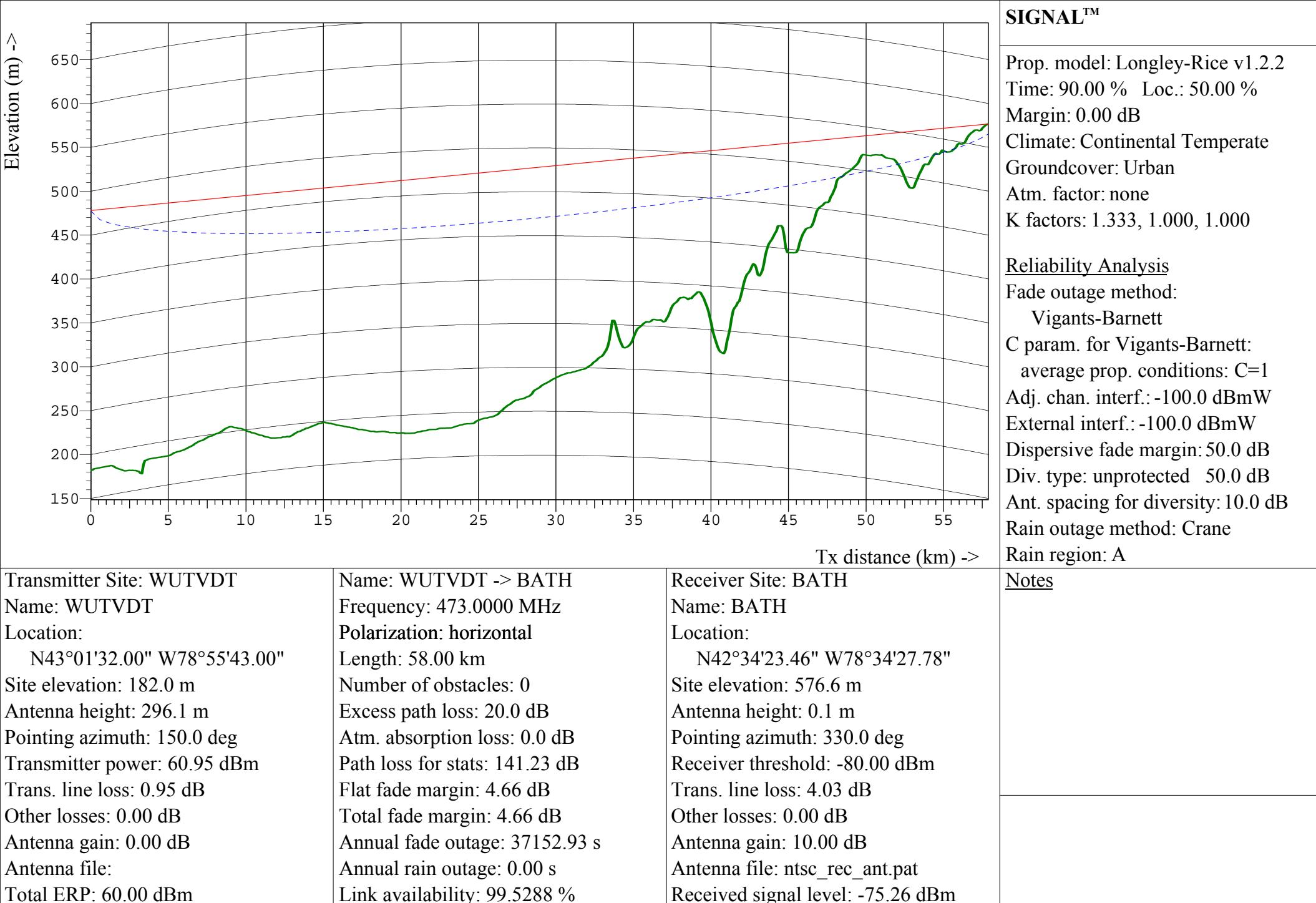
**SIGNAL™**

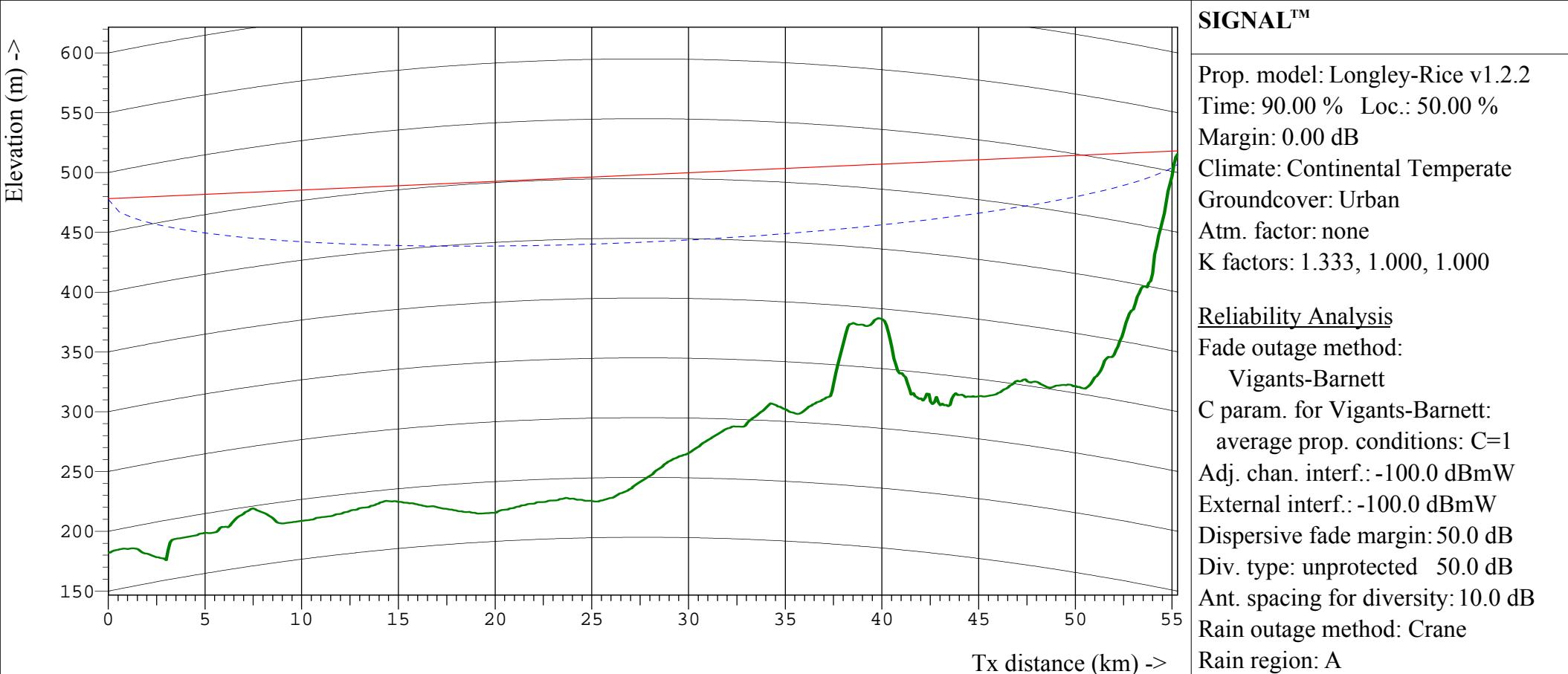
Prop. model: Longley-Rice v1.2.2  
 Time: 90.00 % Loc.: 50.00 %  
 Margin: 0.00 dB  
 Climate: Continental Temperate  
 Groundcover: Urban  
 Atm. factor: none  
 K factors: 1.333, 1.000, 1.000

**Reliability Analysis**  
 Fade outage method:  
     Vigants-Barnett  
 C param. for Vigants-Barnett:  
     average prop. conditions: C=1  
 Adj. chan. interf.: -100.0 dBmW  
 External interf.: -100.0 dBmW  
 Dispersive fade margin: 50.0 dB  
 Div. type: unprotected 50.0 dB  
 Ant. spacing for diversity: 10.0 dB  
 Rain outage method: Crane  
 Rain region: A

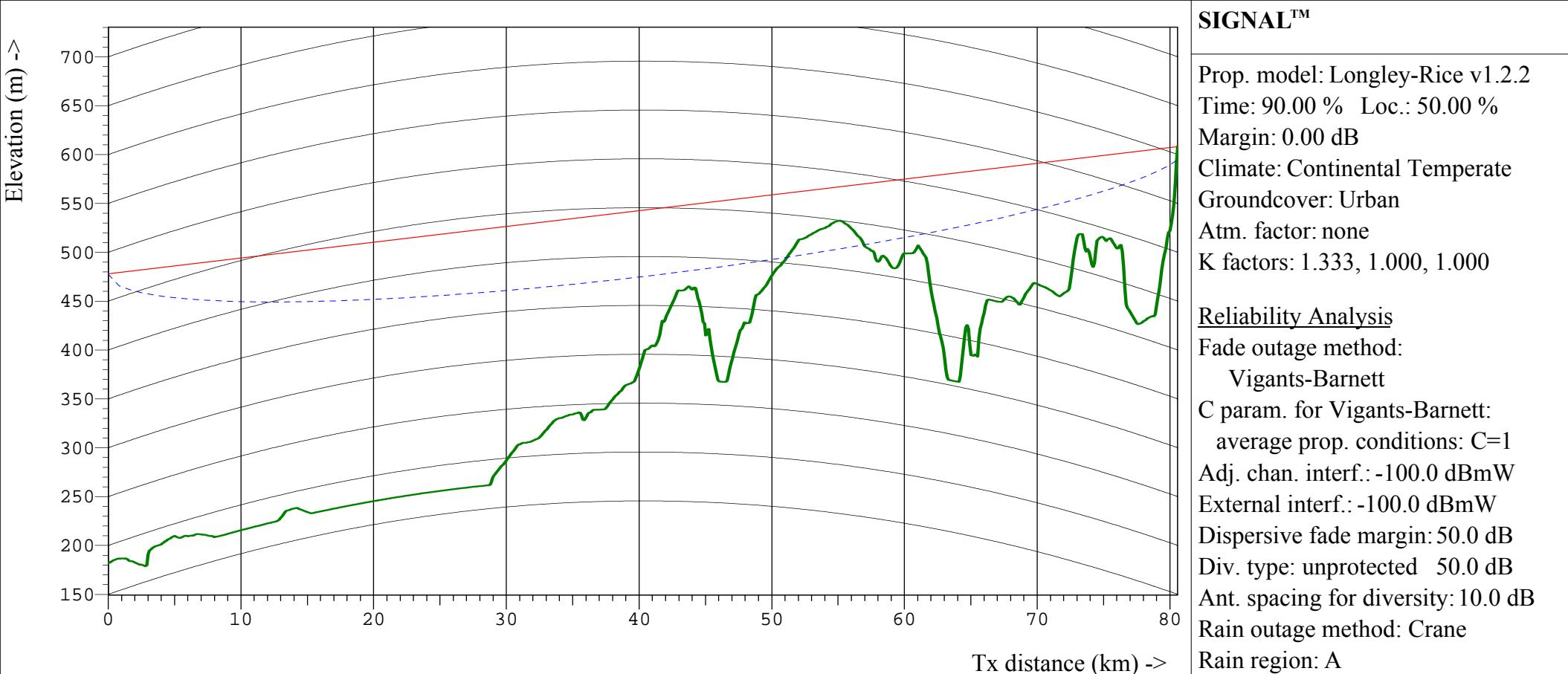
Transmitter Site: WUTVDT Name: WUTVDT Location: N43°01'32.00" W78°55'43.00" Site elevation: 182.0 m Antenna height: 296.1 m Pointing azimuth: 130.0 deg Transmitter power: 60.95 dBm Trans. line loss: 0.95 dB Other losses: 0.00 dB Antenna gain: 0.00 dB Antenna file: Total ERP: 60.00 dBm	Name: WUTVDT -> BATH Frequency: 473.0000 MHz Polarization: horizontal Length: 67.00 km Number of obstacles: 0 Excess path loss: 19.0 dB Atm. absorption loss: 0.0 dB Path loss for stats: 141.45 dB Flat fade margin: 4.43 dB Total fade margin: 4.43 dB Annual fade outage: 60353.96 s Annual rain outage: 0.00 s Link availability: 99.2345 %	Receiver Site: BATH Name: BATH Location: N42°38'11.19" W78°18'03.77" Site elevation: 609.2 m Antenna height: 0.1 m Pointing azimuth: 310.0 deg Receiver threshold: -80.00 dBm Trans. line loss: 4.03 dB Other losses: 0.00 dB Antenna gain: 10.00 dB Antenna file: ntsc_rec_ant.pat Received signal level: -75.48 dBm	Notes
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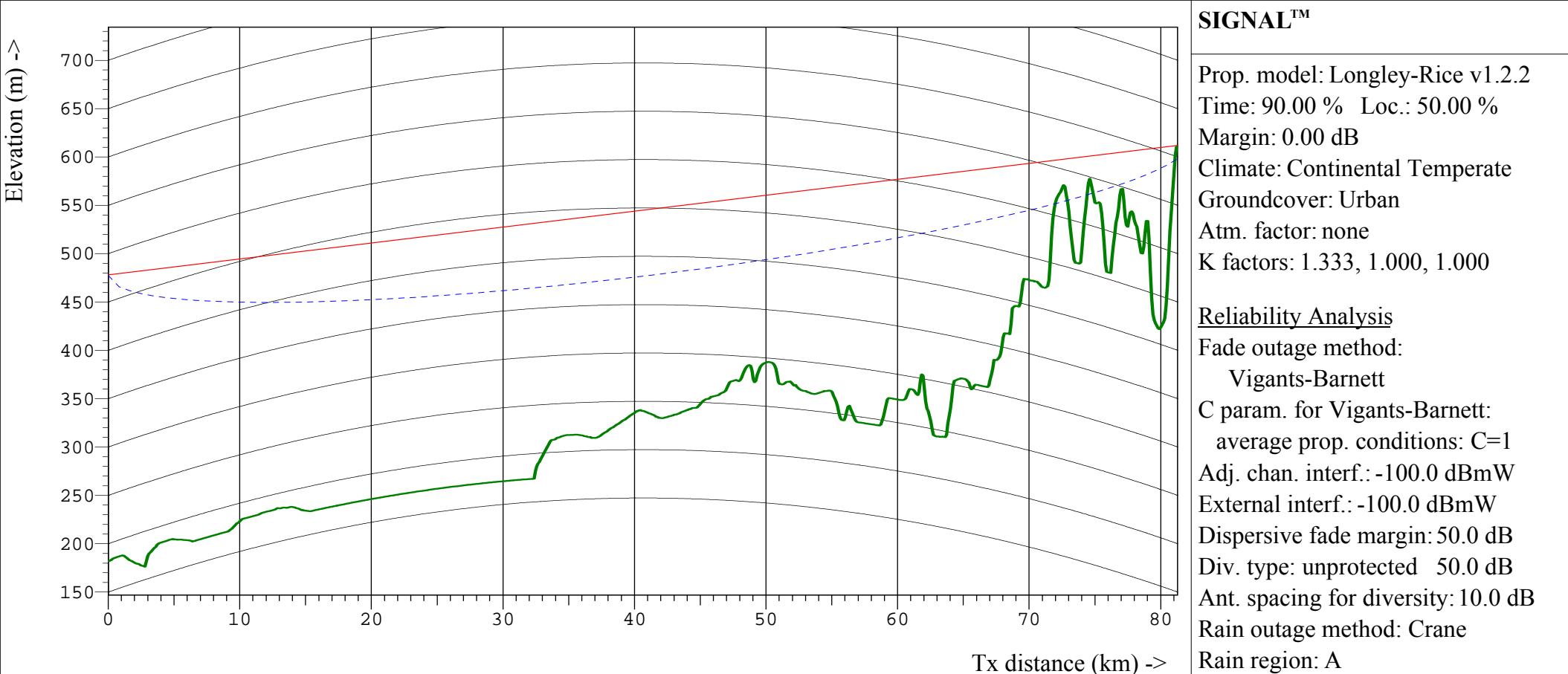




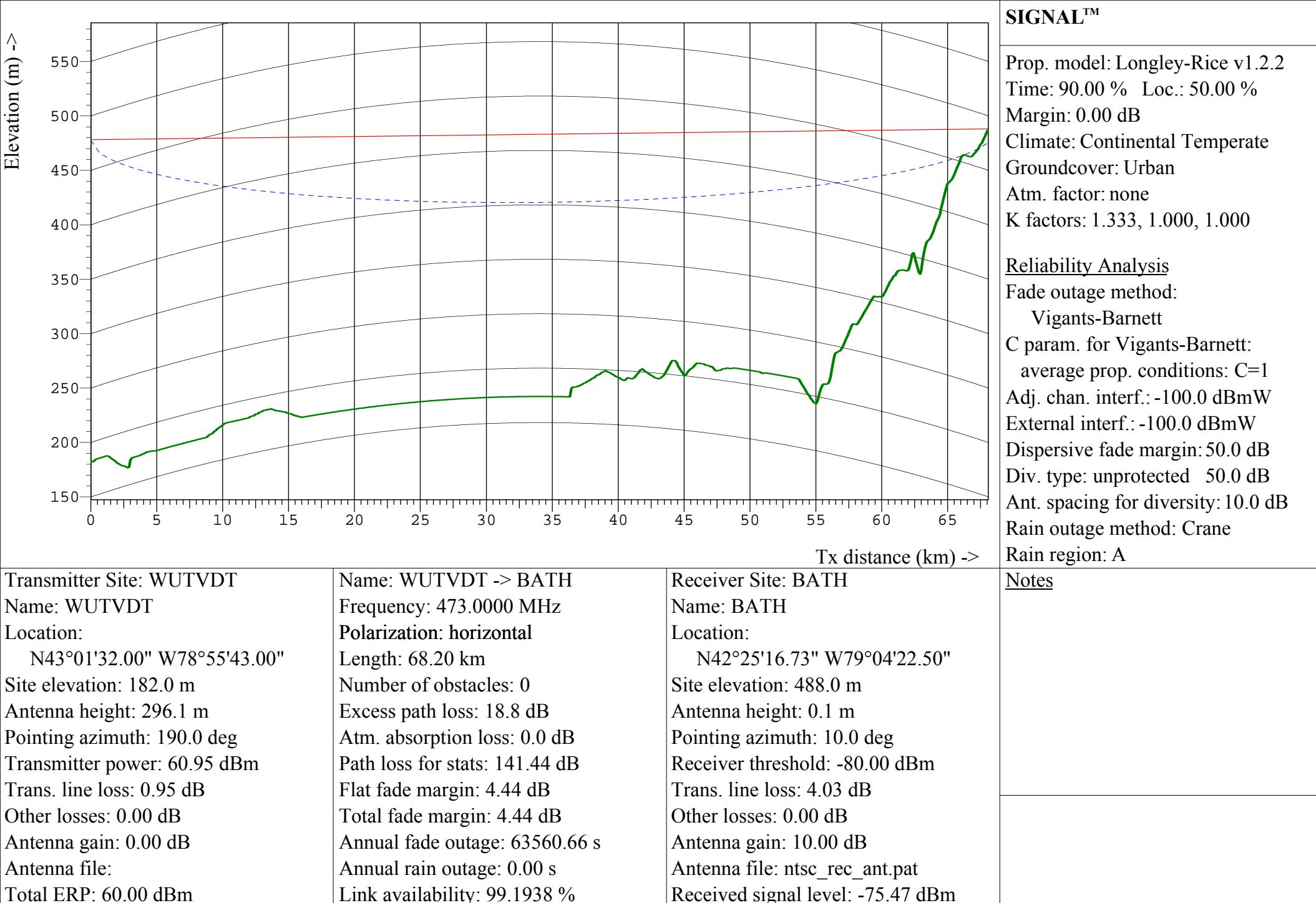
Transmitter Site: WUTVDT Name: WUTVDT Location: N43°01'32.00" W78°55'43.00" Site elevation: 182.0 m Antenna height: 296.1 m Pointing azimuth: 160.0 deg Transmitter power: 60.95 dBm Trans. line loss: 0.95 dB Other losses: 0.00 dB Antenna gain: 0.00 dB Antenna file: Total ERP: 60.00 dBm	Name: WUTVDT -> BATH Frequency: 473.0000 MHz Polarization: horizontal Length: 55.40 km Number of obstacles: 0 Excess path loss: 20.3 dB Atm. absorption loss: 0.0 dB Path loss for stats: 141.09 dB Flat fade margin: 4.80 dB Total fade margin: 4.80 dB Annual fade outage: 31342.44 s Annual rain outage: 0.00 s Link availability: 99.6025 %	Receiver Site: BATH Name: BATH Location: N42°33'25.35" W78°41'50.03" Site elevation: 518.0 m Antenna height: 0.1 m Pointing azimuth: 340.0 deg Receiver threshold: -80.00 dBm Trans. line loss: 4.03 dB Other losses: 0.00 dB Antenna gain: 10.00 dB Antenna file: ntsc_rec_ant.pat Received signal level: -75.12 dBm	<u>Notes</u>
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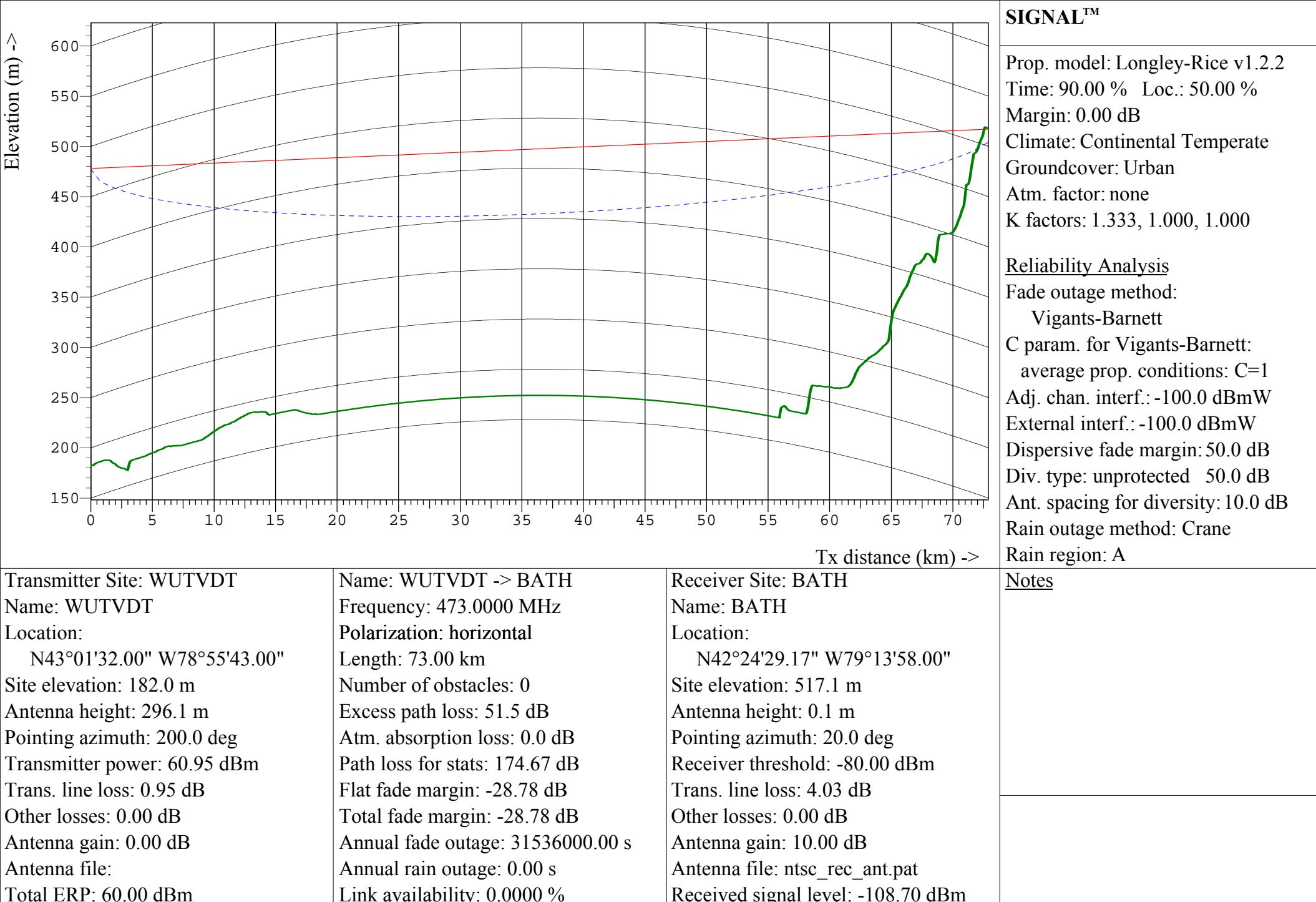


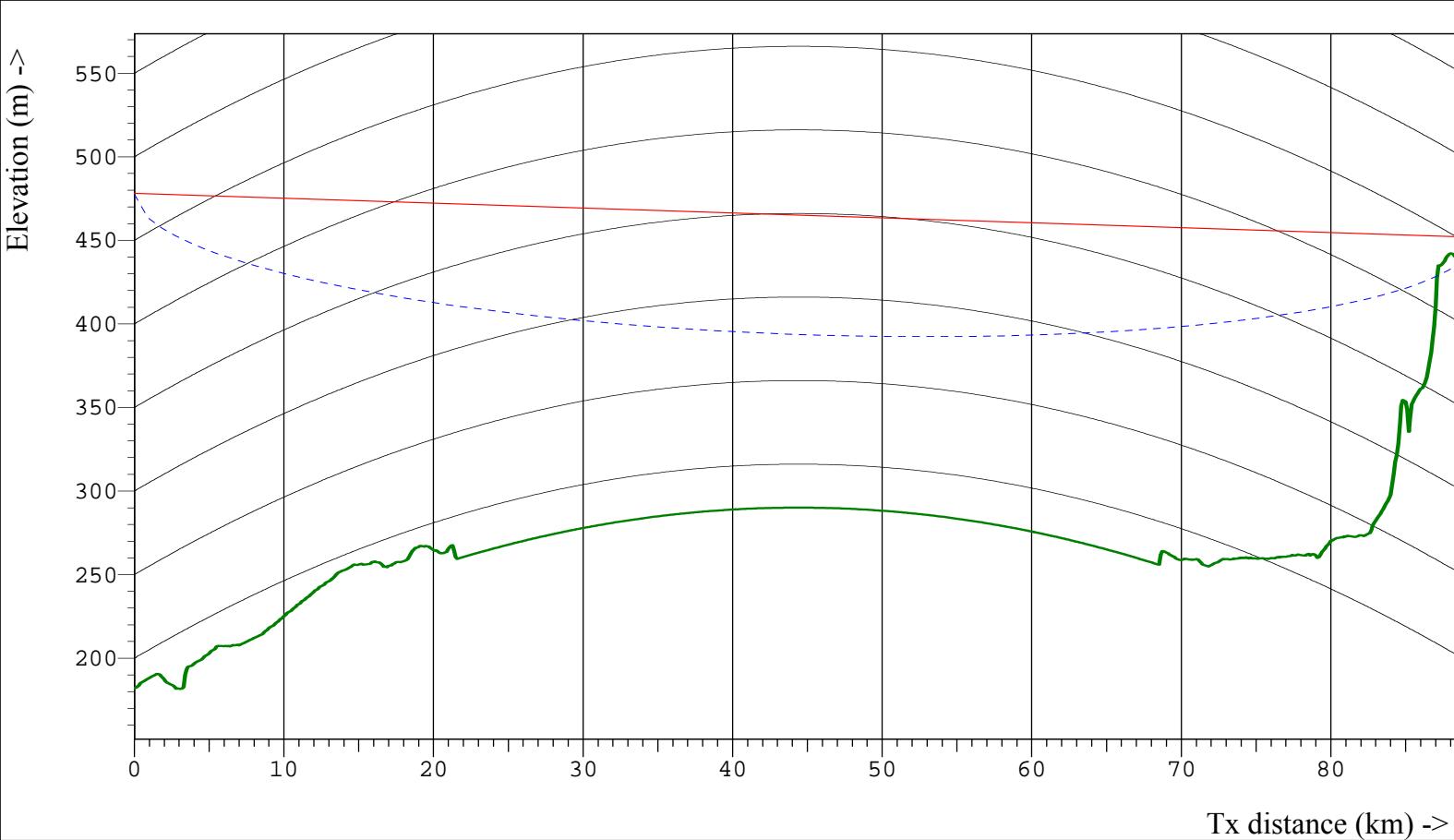
Transmitter Site: WUTVDT Name: WUTVDT Location: N43°01'32.00" W78°55'43.00" Site elevation: 182.0 m Antenna height: 296.1 m Pointing azimuth: 170.0 deg Transmitter power: 60.95 dBm Trans. line loss: 0.95 dB Other losses: 0.00 dB Antenna gain: 0.00 dB Antenna file: Total ERP: 60.00 dBm	Name: WUTVDT -> BATH Frequency: 473.0000 MHz Polarization: horizontal Length: 80.70 km Number of obstacles: 0 Excess path loss: 19.1 dB Atm. absorption loss: 0.0 dB Path loss for stats: 143.16 dB Flat fade margin: 2.72 dB Total fade margin: 2.72 dB Annual fade outage: 156434.47 s Annual rain outage: 0.00 s Link availability: 98.0158 %	Receiver Site: BATH Name: BATH Location: N42°18'37.96" W78°45'29.38" Site elevation: 608.2 m Antenna height: 0.1 m Pointing azimuth: 350.0 deg Receiver threshold: -80.00 dBm Trans. line loss: 4.03 dB Other losses: 0.00 dB Antenna gain: 10.00 dB Antenna file: ntsc_rec_ant.pat Received signal level: -77.19 dBm	<u>Notes</u>
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Transmitter Site: WUTVDT Name: WUTVDT Location: N43°01'32.00" W78°55'43.00" Site elevation: 182.0 m Antenna height: 296.1 m Pointing azimuth: 180.0 deg Transmitter power: 60.95 dBm Trans. line loss: 0.95 dB Other losses: 0.00 dB Antenna gain: 0.00 dB Antenna file: Total ERP: 60.00 dBm	Name: WUTVDT -> BATH Frequency: 473.0000 MHz Polarization: horizontal Length: 81.40 km Number of obstacles: 0 Excess path loss: 17.3 dB Atm. absorption loss: 0.0 dB Path loss for stats: 141.46 dB Flat fade margin: 4.42 dB Total fade margin: 4.42 dB Annual fade outage: 108654.84 s Annual rain outage: 0.00 s Link availability: 98.6218 %	Receiver Site: BATH Name: BATH Location: N42°17'36.05" W78°55'43.00" Site elevation: 612.0 m Antenna height: 0.1 m Pointing azimuth: 0.0 deg Receiver threshold: -80.00 dBm Trans. line loss: 4.03 dB Other losses: 0.00 dB Antenna gain: 10.00 dB Antenna file: ntsc_rec_ant.pat Received signal level: -75.49 dBm	<u>Notes</u>
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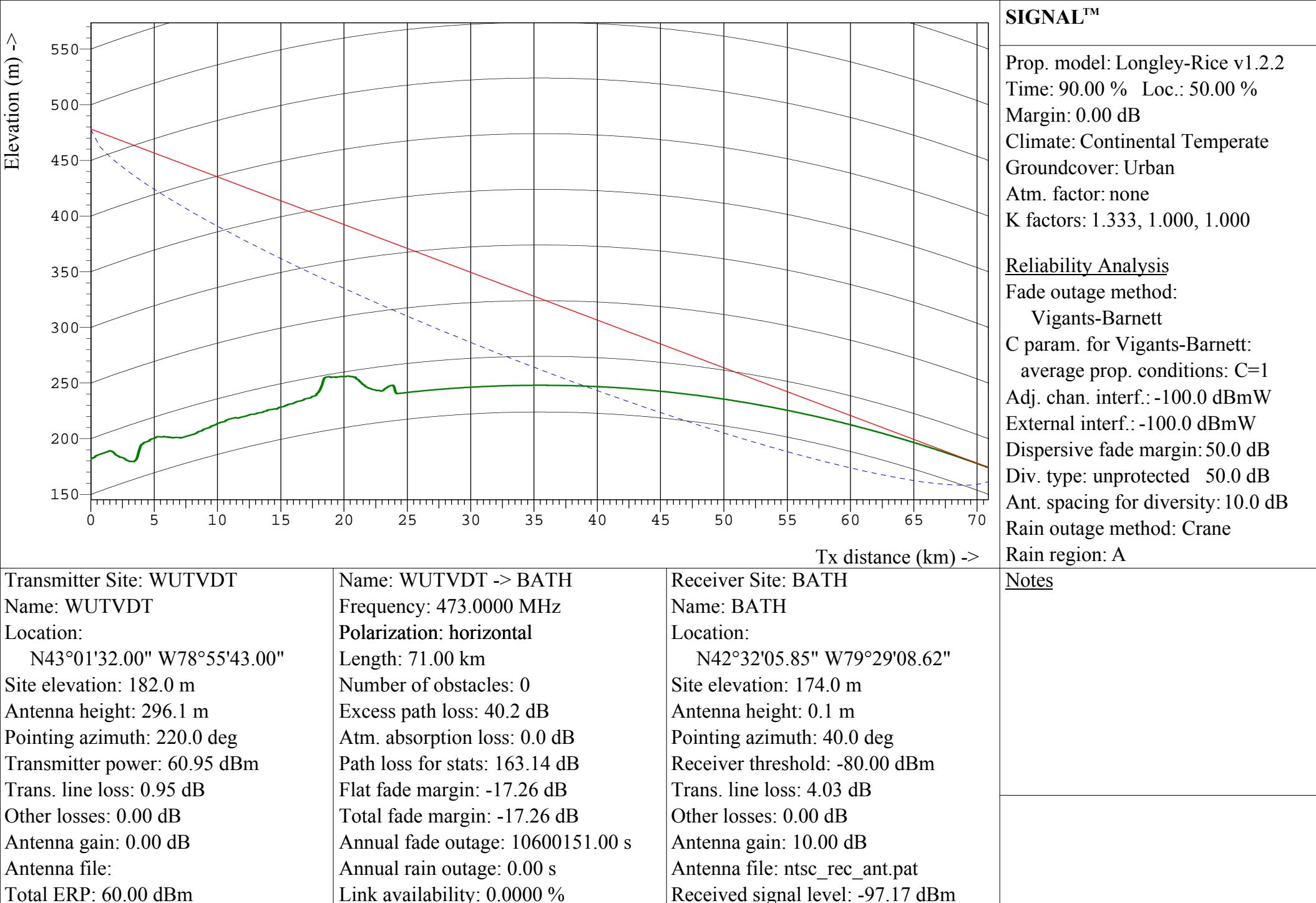


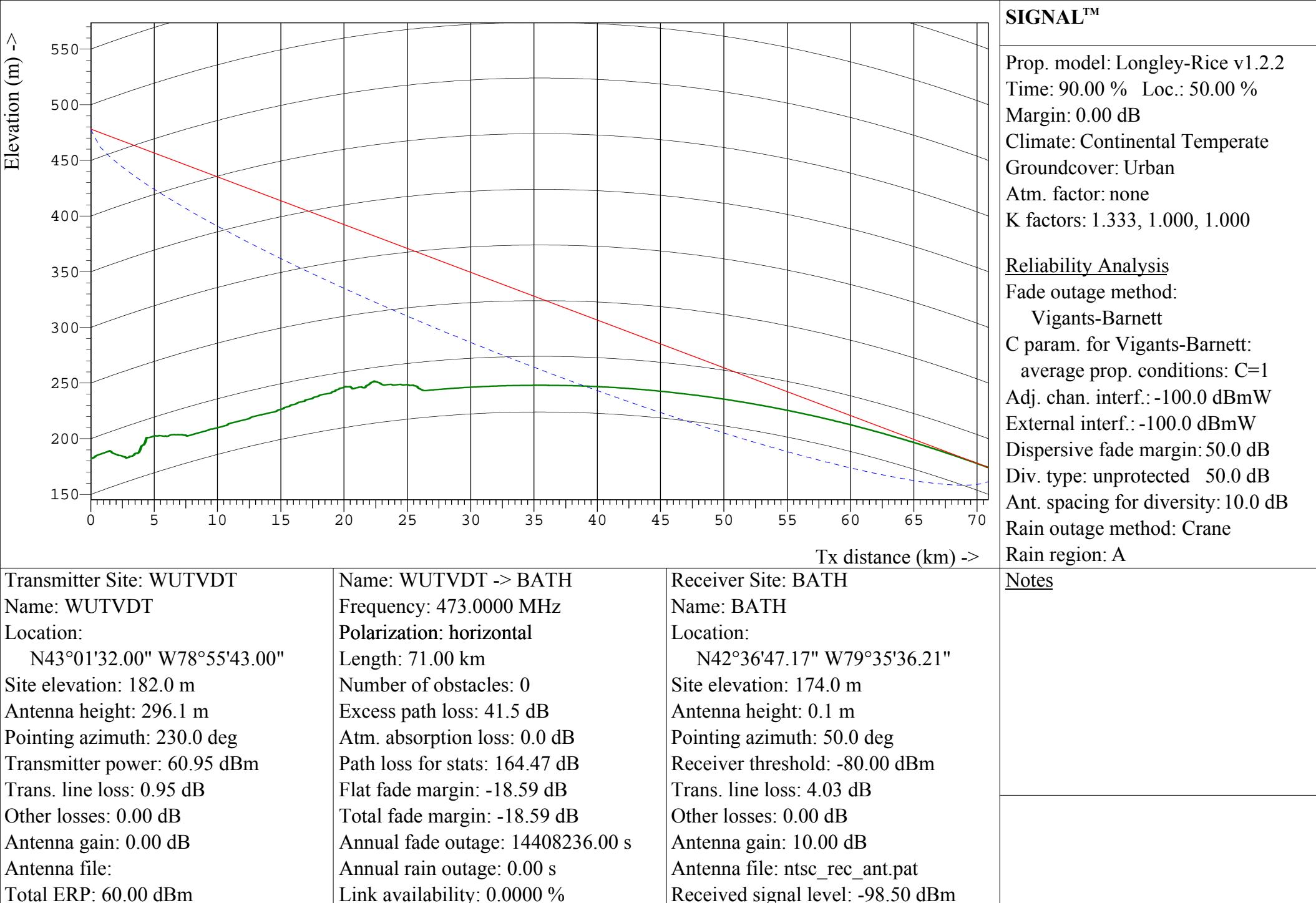


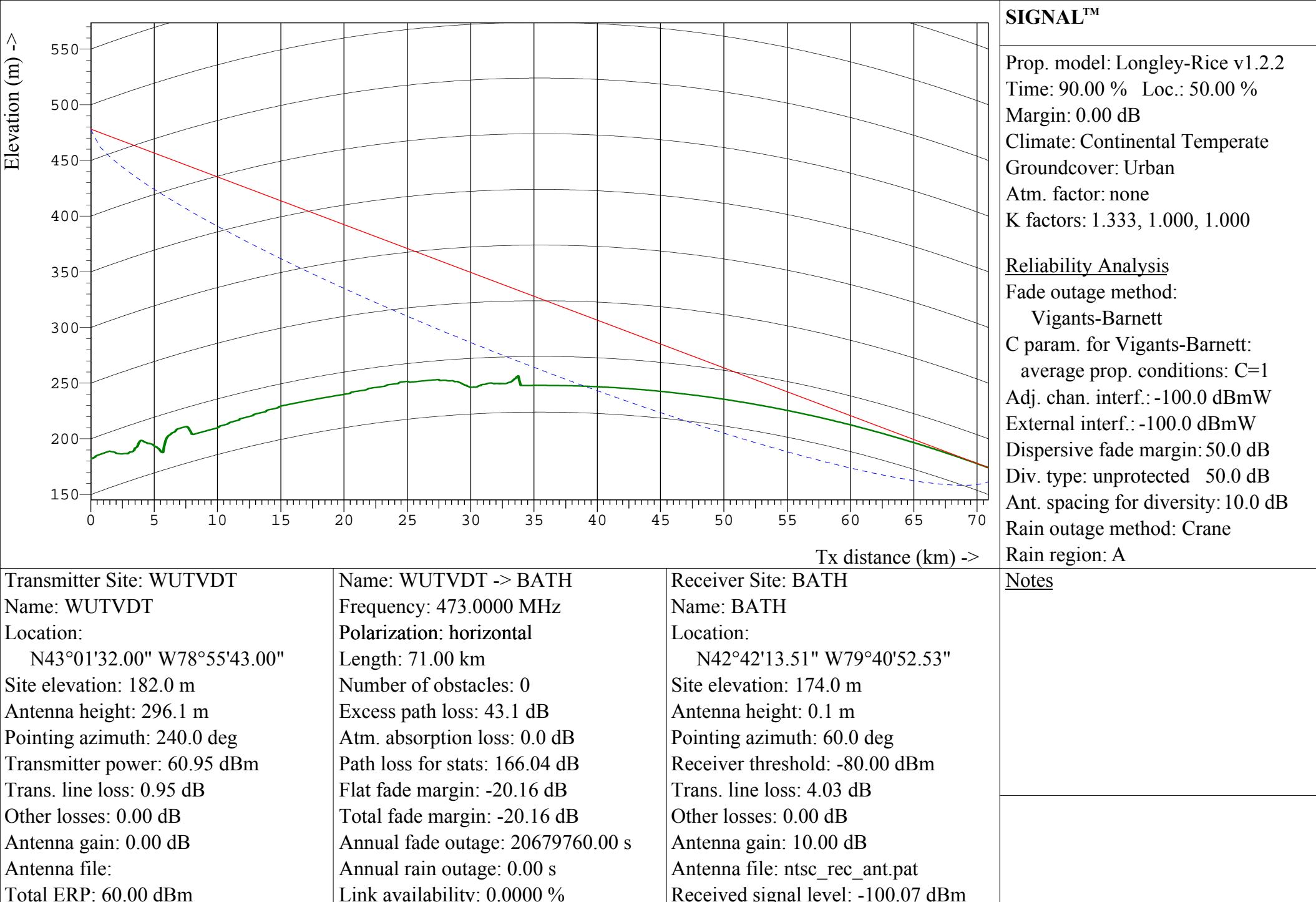
## SIGNAL™

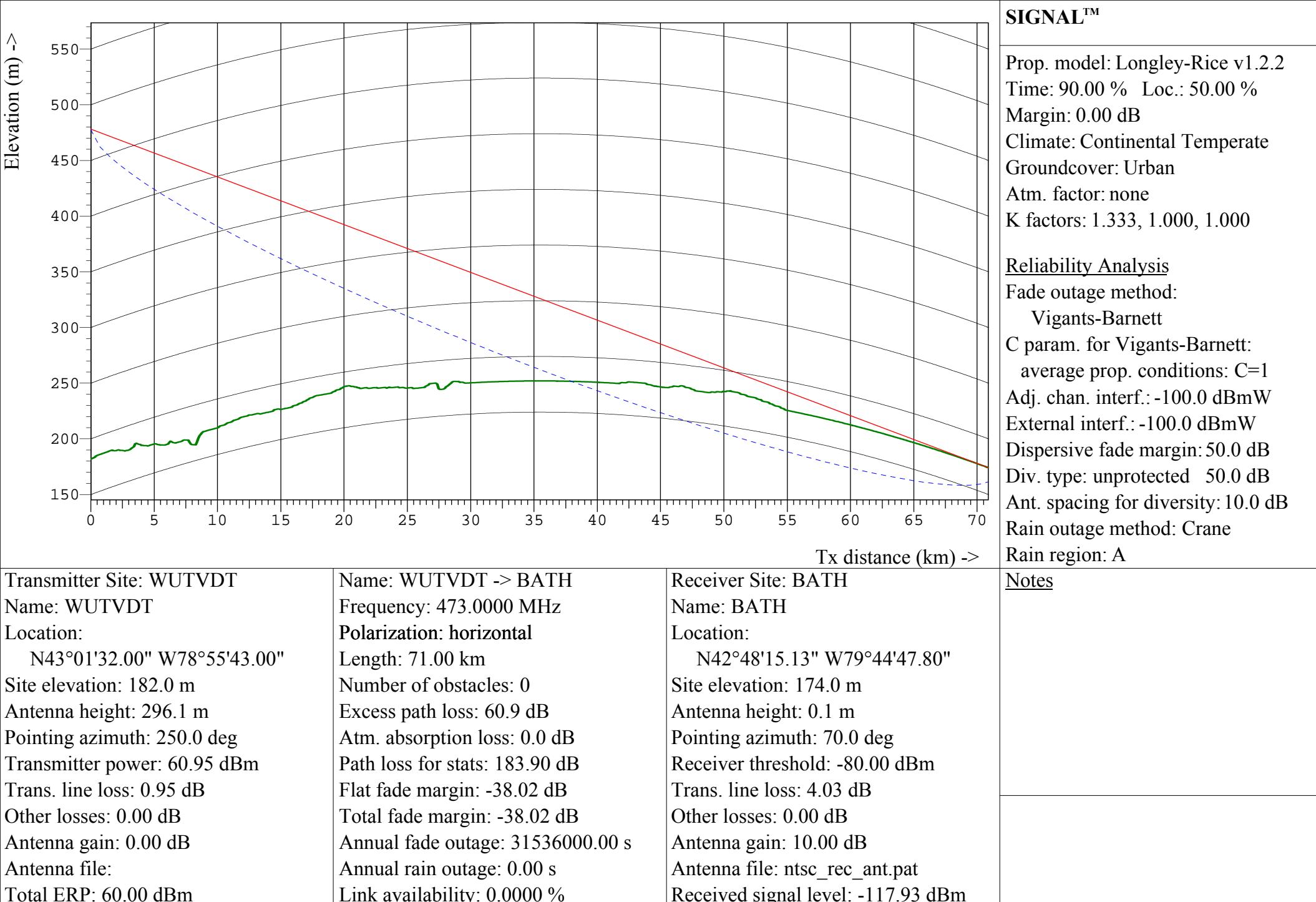
Prop. model: Longley-Rice v1.2.2  
 Time: 90.00 % Loc.: 50.00 %  
 Margin: 0.00 dB  
 Climate: Continental Temperate  
 Groundcover: Urban  
 Atm. factor: none  
 K factors: 1.333, 1.000, 1.000  
  
Reliability Analysis  
 Fade outage method:  
     Vigants-Barnett  
 C param. for Vigants-Barnett:  
     average prop. conditions: C=1  
 Adj. chan. interf.: -100.0 dBmW  
 External interf.: -100.0 dBmW  
 Dispersive fade margin: 50.0 dB  
 Div. type: unprotected 50.0 dB  
 Ant. spacing for diversity: 10.0 dB  
 Rain outage method: Crane  
 Rain region: A

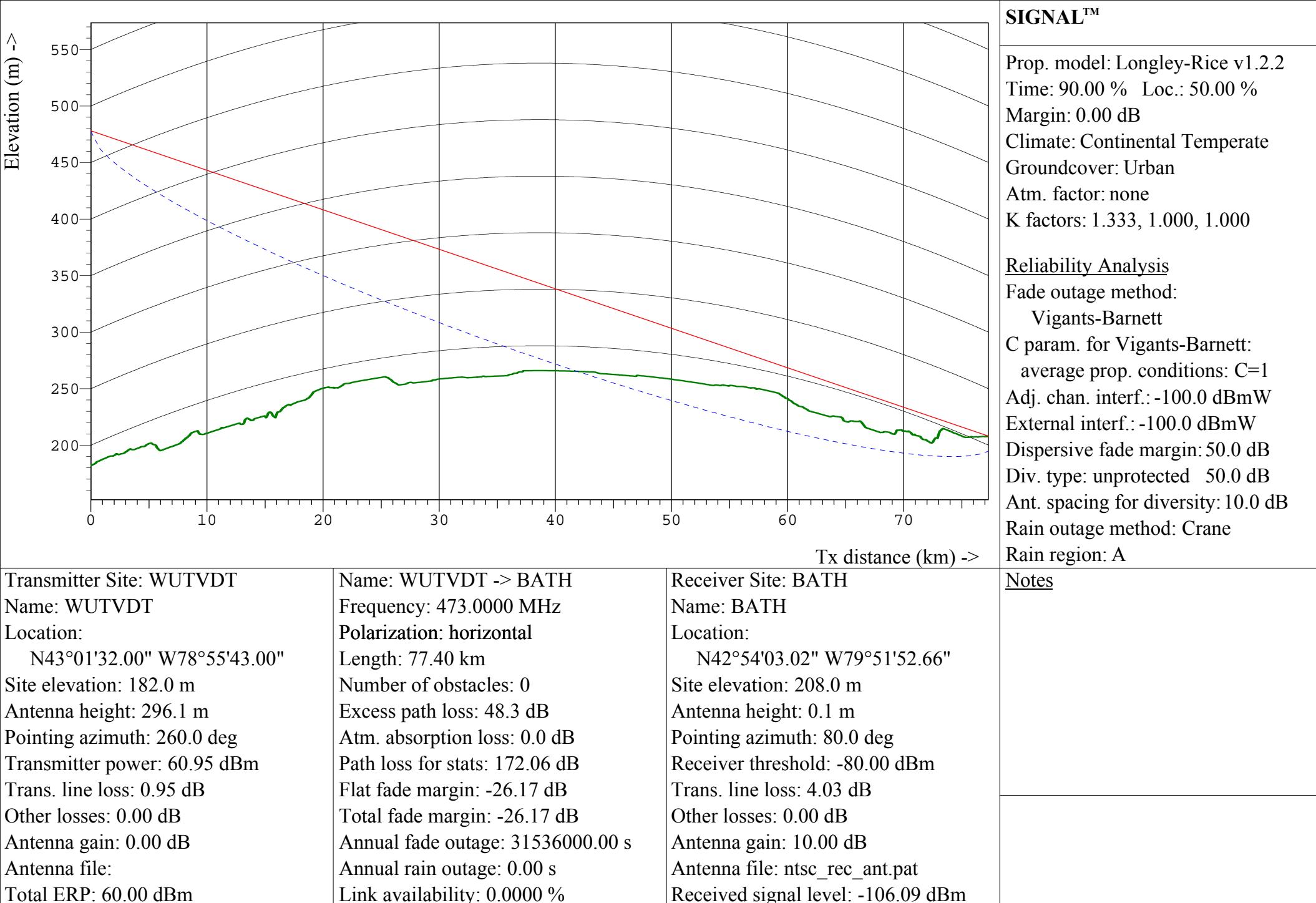
Transmitter Site: WUTVDT Name: WUTVDT Location: N43°01'32.00" W78°55'43.00" Site elevation: 182.0 m Antenna height: 296.1 m Pointing azimuth: 210.0 deg Transmitter power: 60.95 dBm Trans. line loss: 0.95 dB Other losses: 0.00 dB Antenna gain: 0.00 dB Antenna file: Total ERP: 60.00 dBm	Name: WUTVDT -> BATH Frequency: 473.0000 MHz Polarization: horizontal Length: 88.90 km Number of obstacles: 0 Excess path loss: 16.4 dB Atm. absorption loss: 0.0 dB Path loss for stats: 141.37 dB Flat fade margin: 4.52 dB Total fade margin: 4.52 dB Annual fade outage: 138402.20 s Annual rain outage: 0.00 s Link availability: 98.2445 %	Receiver Site: BATH Name: BATH Location: N42°19'54.26" W79°28'10.07" Site elevation: 452.0 m Antenna height: 0.1 m Pointing azimuth: 30.0 deg Receiver threshold: -80.00 dBm Trans. line loss: 4.03 dB Other losses: 0.00 dB Antenna gain: 10.00 dB Antenna file: ntsc_rec_ant.pat Received signal level: -75.40 dBm	<u>Notes</u>
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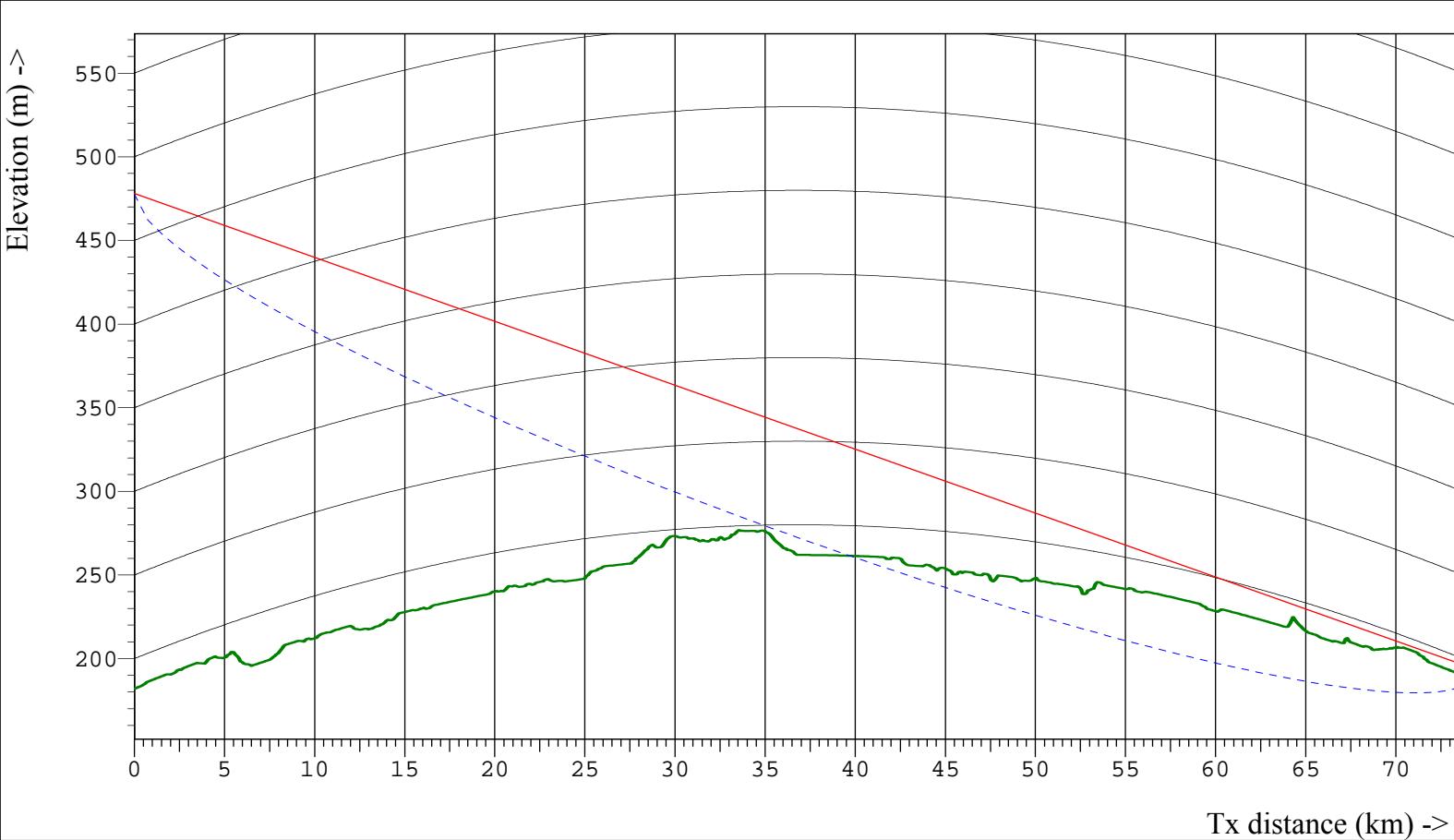










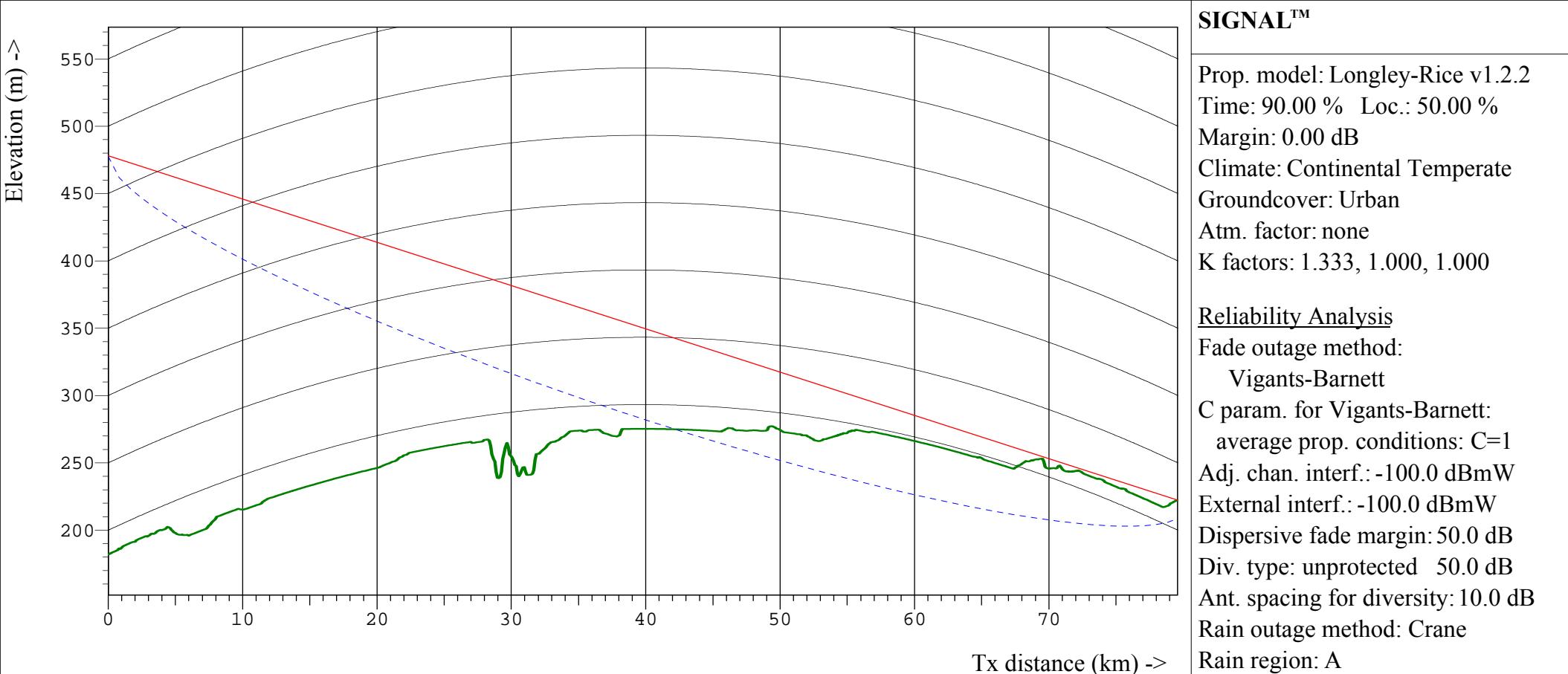


**SIGNAL™**

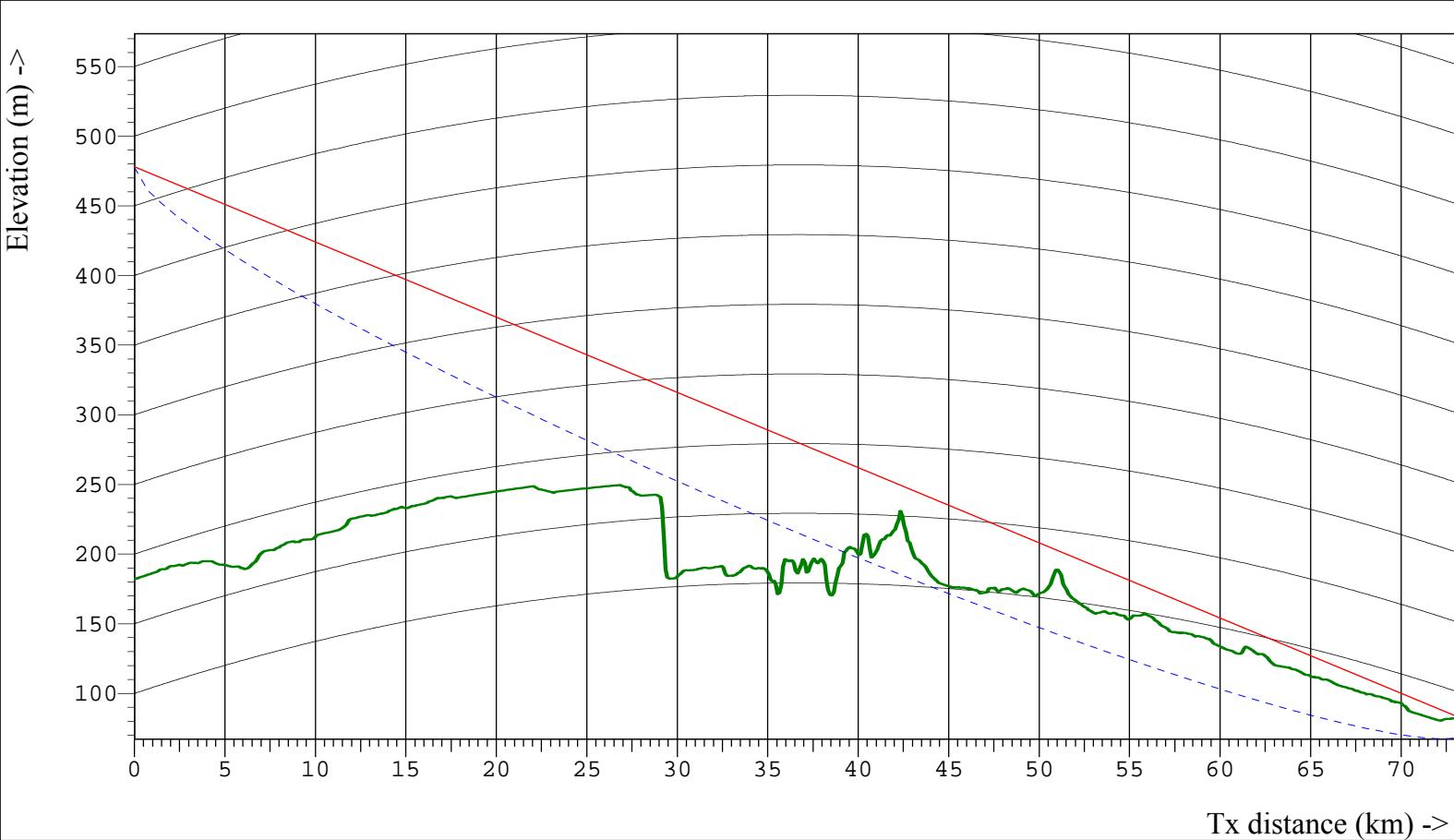
Prop. model: Longley-Rice v1.2.2  
 Time: 90.00 % Loc.: 50.00 %  
 Margin: 0.00 dB  
 Climate: Continental Temperate  
 Groundcover: Urban  
 Atm. factor: none  
 K factors: 1.333, 1.000, 1.000

Reliability Analysis  
 Fade outage method:  
     Vigants-Barnett  
 C param. for Vigants-Barnett:  
     average prop. conditions: C=1  
 Adj. chan. interf.: -100.0 dBmW  
 External interf.: -100.0 dBmW  
 Dispersive fade margin: 50.0 dB  
 Div. type: unprotected 50.0 dB  
 Ant. spacing for diversity: 10.0 dB  
 Rain outage method: Crane  
 Rain region: A

Transmitter Site: WUTVDT Name: WUTVDT Location: N43°01'32.00" W78°55'43.00" Site elevation: 182.0 m Antenna height: 296.1 m Pointing azimuth: 270.0 deg Transmitter power: 60.95 dBm Trans. line loss: 0.95 dB Other losses: 0.00 dB Antenna gain: 0.00 dB Antenna file: Total ERP: 60.00 dBm	Name: WUTVDT -> BATH Frequency: 473.0000 MHz Polarization: horizontal Length: 73.80 km Number of obstacles: 0 Excess path loss: 39.5 dB Atm. absorption loss: 0.0 dB Path loss for stats: 162.75 dB Flat fade margin: -16.87 dB Total fade margin: -16.87 dB Annual fade outage: 10884130.00 s Annual rain outage: 0.00 s Link availability: 0.0000 %	Receiver Site: BATH Name: BATH Location: N43°01'19.08" W79°50'11.93" Site elevation: 196.4 m Antenna height: 0.1 m Pointing azimuth: 90.0 deg Receiver threshold: -80.00 dBm Trans. line loss: 4.03 dB Other losses: 0.00 dB Antenna gain: 10.00 dB Antenna file: ntsc_rec_ant.pat Received signal level: -96.78 dBm	<u>Notes</u>
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Transmitter Site: WUTVDT Name: WUTVDT Location: N43°01'32.00" W78°55'43.00" Site elevation: 182.0 m Antenna height: 296.1 m Pointing azimuth: 280.0 deg Transmitter power: 60.95 dBm Trans. line loss: 0.95 dB Other losses: 0.00 dB Antenna gain: 0.00 dB Antenna file: Total ERP: 60.00 dBm	Name: WUTVDT -> BATH Frequency: 473.0000 MHz Polarization: horizontal Length: 79.70 km Number of obstacles: 0 Excess path loss: 29.3 dB Atm. absorption loss: 0.0 dB Path loss for stats: 153.22 dB Flat fade margin: -7.34 dB Total fade margin: -7.34 dB Annual fade outage: 1527738.12 s Annual rain outage: 0.00 s Link availability: 80.6223 %	Receiver Site: BATH Name: BATH Location: N43°08'45.51" W79°53'46.68" Site elevation: 222.1 m Antenna height: 0.1 m Pointing azimuth: 100.0 deg Receiver threshold: -80.00 dBm Trans. line loss: 4.03 dB Other losses: 0.00 dB Antenna gain: 10.00 dB Antenna file: ntsc_rec_ant.pat Received signal level: -87.25 dBm	<u>Notes</u>
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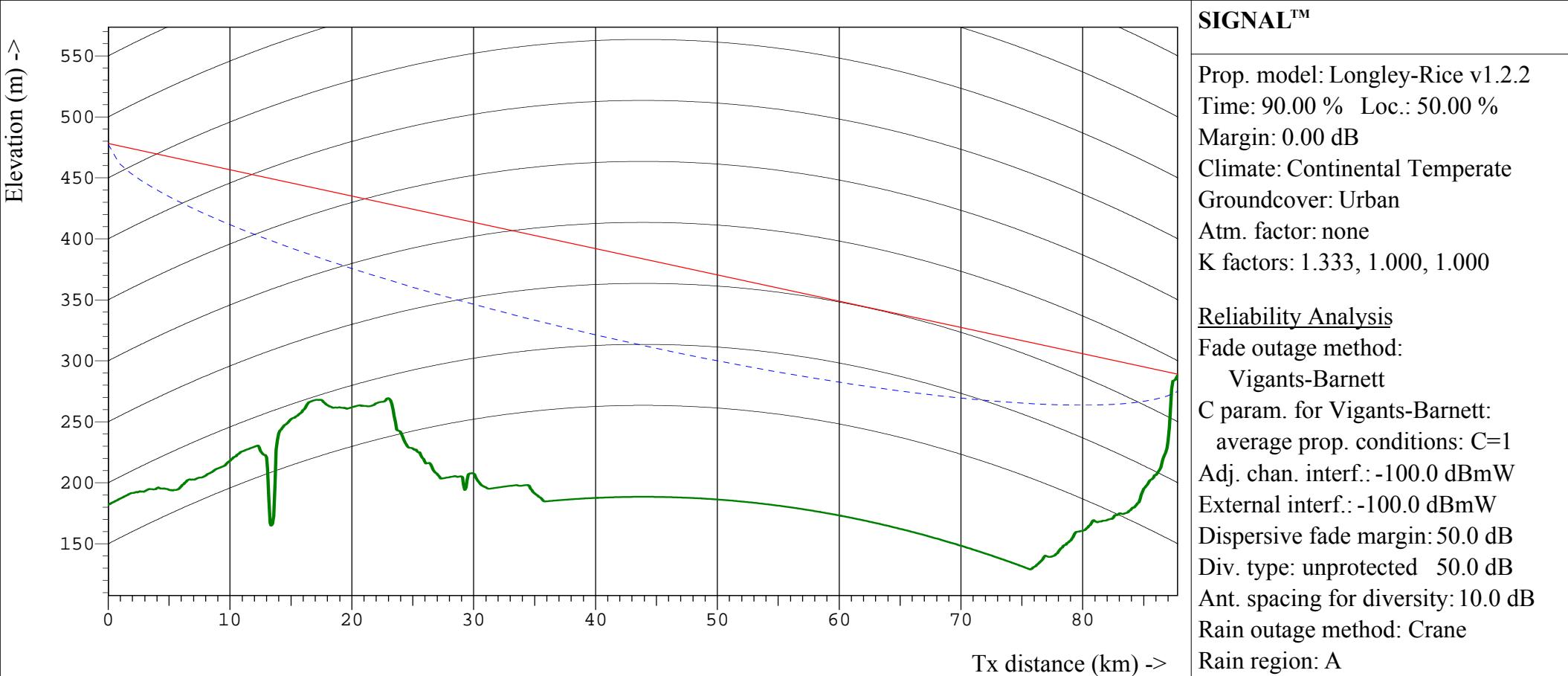
**SIGNAL™**

Prop. model: Longley-Rice v1.2.2  
 Time: 90.00 % Loc.: 50.00 %  
 Margin: 0.00 dB  
 Climate: Continental Temperate  
 Groundcover: Urban  
 Atm. factor: none  
 K factors: 1.333, 1.000, 1.000

#### Reliability Analysis

Fade outage method:  
 Vigants-Barnett  
 C param. for Vigants-Barnett:  
 average prop. conditions: C=1  
 Adj. chan. interf.: -100.0 dBmW  
 External interf.: -100.0 dBmW  
 Dispersive fade margin: 50.0 dB  
 Div. type: unprotected 50.0 dB  
 Ant. spacing for diversity: 10.0 dB  
 Rain outage method: Crane  
 Rain region: A

Transmitter Site: WUTVDT Name: WUTVDT Location: N43°01'32.00" W78°55'43.00" Site elevation: 182.0 m Antenna height: 296.1 m Pointing azimuth: 290.0 deg Transmitter power: 60.95 dBm Trans. line loss: 0.95 dB Other losses: 0.00 dB Antenna gain: 0.00 dB Antenna file: Total ERP: 60.00 dBm	Name: WUTVDT -> BATH Frequency: 473.0000 MHz Polarization: horizontal Length: 73.50 km Number of obstacles: 0 Excess path loss: 28.5 dB Atm. absorption loss: 0.0 dB Path loss for stats: 151.76 dB Flat fade margin: -5.88 dB Total fade margin: -5.88 dB Annual fade outage: 856118.62 s Annual rain outage: 0.00 s Link availability: 89.1411 %	Receiver Site: BATH Name: BATH Location: N43°14'54.68" W79°46'53.64" Site elevation: 81.7 m Antenna height: 0.1 m Pointing azimuth: 110.0 deg Receiver threshold: -80.00 dBm Trans. line loss: 4.03 dB Other losses: 0.00 dB Antenna gain: 10.00 dB Antenna file: ntsc_rec_ant.pat Received signal level: -85.79 dBm	Notes
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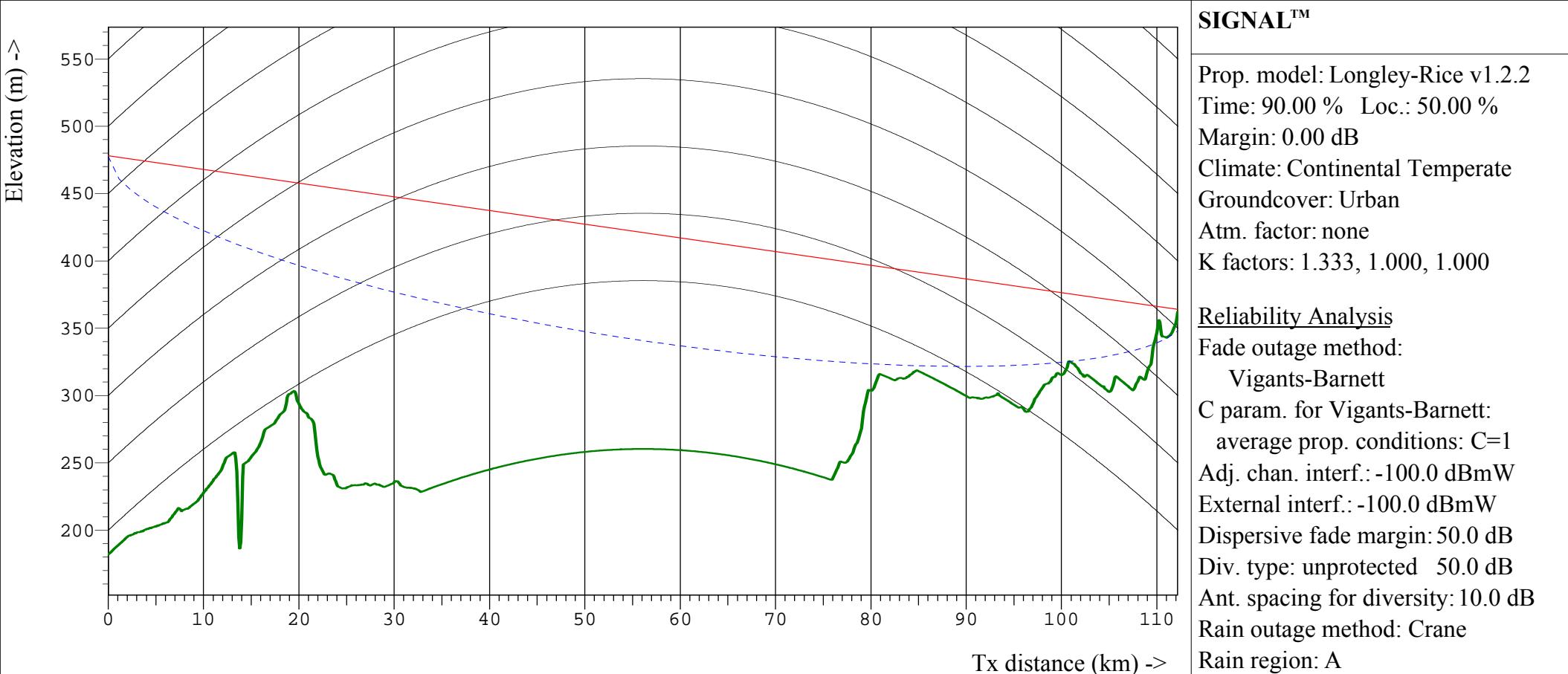
**SIGNAL™**

Prop. model: Longley-Rice v1.2.2  
 Time: 90.00 % Loc.: 50.00 %  
 Margin: 0.00 dB  
 Climate: Continental Temperate  
 Groundcover: Urban  
 Atm. factor: none  
 K factors: 1.333, 1.000, 1.000

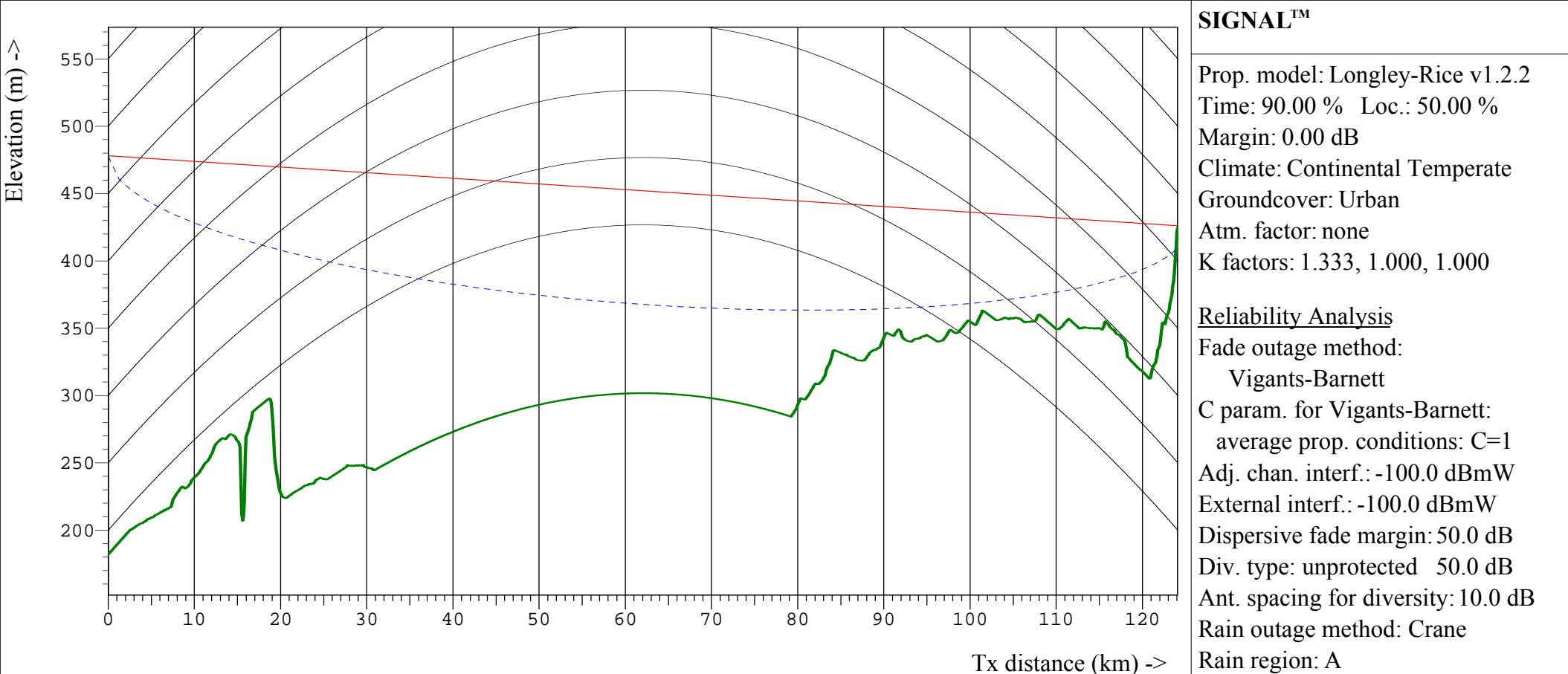
#### Reliability Analysis

Fade outage method:  
 Vigants-Barnett  
 C param. for Vigants-Barnett:  
     average prop. conditions: C=1  
 Adj. chan. interf.: -100.0 dBmW  
 External interf.: -100.0 dBmW  
 Dispersive fade margin: 50.0 dB  
 Div. type: unprotected 50.0 dB  
 Ant. spacing for diversity: 10.0 dB  
 Rain outage method: Crane  
 Rain region: A

Transmitter Site: WUTVDT Name: WUTVDT Location: N43°01'32.00" W78°55'43.00" Site elevation: 182.0 m Antenna height: 296.1 m Pointing azimuth: 300.0 deg Transmitter power: 60.95 dBm Trans. line loss: 0.95 dB Other losses: 0.00 dB Antenna gain: 0.00 dB Antenna file: Total ERP: 60.00 dBm	Name: WUTVDT -> BATH Frequency: 473.0000 MHz Polarization: horizontal Length: 87.90 km Number of obstacles: 0 Excess path loss: 16.6 dB Atm. absorption loss: 0.0 dB Path loss for stats: 141.39 dB Flat fade margin: 4.50 dB Total fade margin: 4.50 dB Annual fade outage: 134420.42 s Annual rain outage: 0.00 s Link availability: 98.2950 %	Receiver Site: BATH Name: BATH Location: N43°25'01.32" W79°52'16.77" Site elevation: 289.0 m Antenna height: 0.1 m Pointing azimuth: 120.0 deg Receiver threshold: -80.00 dBm Trans. line loss: 4.03 dB Other losses: 0.00 dB Antenna gain: 10.00 dB Antenna file: ntsc_rec_ant.pat Received signal level: -75.42 dBm	<u>Notes</u>
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Transmitter Site: WUTVDT Name: WUTVDT Location: N43°01'32.00" W78°55'43.00" Site elevation: 182.0 m Antenna height: 296.1 m Pointing azimuth: 310.0 deg Transmitter power: 60.95 dBm Trans. line loss: 0.95 dB Other losses: 0.00 dB Antenna gain: 0.00 dB Antenna file: Total ERP: 60.00 dBm	Name: WUTVDT -> BATH Frequency: 473.0000 MHz Polarization: horizontal Length: 112.30 km Number of obstacles: 0 Excess path loss: 22.5 dB Atm. absorption loss: 0.0 dB Path loss for stats: 149.45 dB Flat fade margin: -3.57 dB Total fade margin: -3.57 dB Annual fade outage: 1795591.50 s Annual rain outage: 0.00 s Link availability: 77.2249 %	Receiver Site: BATH Name: BATH Location: N43°40'11.73" W79°59'54.34" Site elevation: 363.9 m Antenna height: 0.1 m Pointing azimuth: 130.0 deg Receiver threshold: -80.00 dBm Trans. line loss: 4.03 dB Other losses: 0.00 dB Antenna gain: 10.00 dB Antenna file: ntsc_rec_ant.pat Received signal level: -83.48 dBm	<u>Notes</u>
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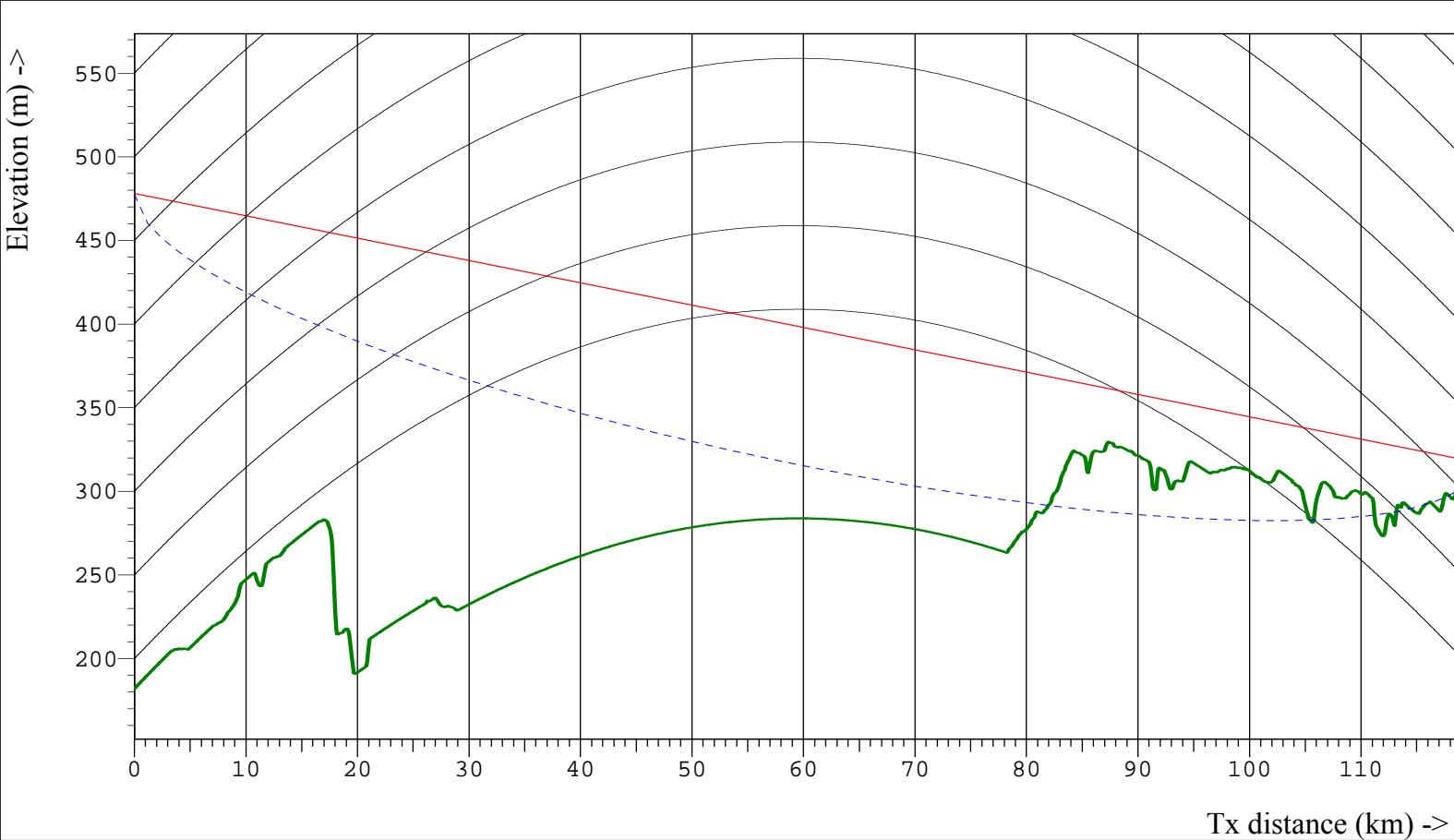
**SIGNAL™**

Prop. model: Longley-Rice v1.2.2  
 Time: 90.00 % Loc.: 50.00 %  
 Margin: 0.00 dB  
 Climate: Continental Temperate  
 Groundcover: Urban  
 Atm. factor: none  
 K factors: 1.333, 1.000, 1.000

#### Reliability Analysis

Fade outage method:  
 Vigants-Barnett  
 C param. for Vigants-Barnett:  
     average prop. conditions: C=1  
 Adj. chan. interf.: -100.0 dBmW  
 External interf.: -100.0 dBmW  
 Dispersive fade margin: 50.0 dB  
 Div. type: unprotected 50.0 dB  
 Ant. spacing for diversity: 10.0 dB  
 Rain outage method: Crane  
 Rain region: A

Transmitter Site: WUTVDT Name: WUTVDT Location: N43°01'32.00" W78°55'43.00" Site elevation: 182.0 m Antenna height: 296.1 m Pointing azimuth: 320.0 deg Transmitter power: 60.95 dBm Trans. line loss: 0.95 dB Other losses: 0.00 dB Antenna gain: 0.00 dB Antenna file: Total ERP: 60.00 dBm	Name: WUTVDT -> BATH Frequency: 473.0000 MHz Polarization: horizontal Length: 124.20 km Number of obstacles: 0 Excess path loss: 22.4 dB Atm. absorption loss: 0.0 dB Path loss for stats: 150.25 dB Flat fade margin: -4.37 dB Total fade margin: -4.37 dB Annual fade outage: 2920977.50 s Annual rain outage: 0.00 s Link availability: 62.9506 %	Receiver Site: BATH Name: BATH Location: N43°52'37.55" W79°55'29.45" Site elevation: 426.0 m Antenna height: 0.1 m Pointing azimuth: 140.0 deg Receiver threshold: -80.00 dBm Trans. line loss: 4.03 dB Other losses: 0.00 dB Antenna gain: 10.00 dB Antenna file: ntsc_rec_ant.pat Received signal level: -84.28 dBm	Notes
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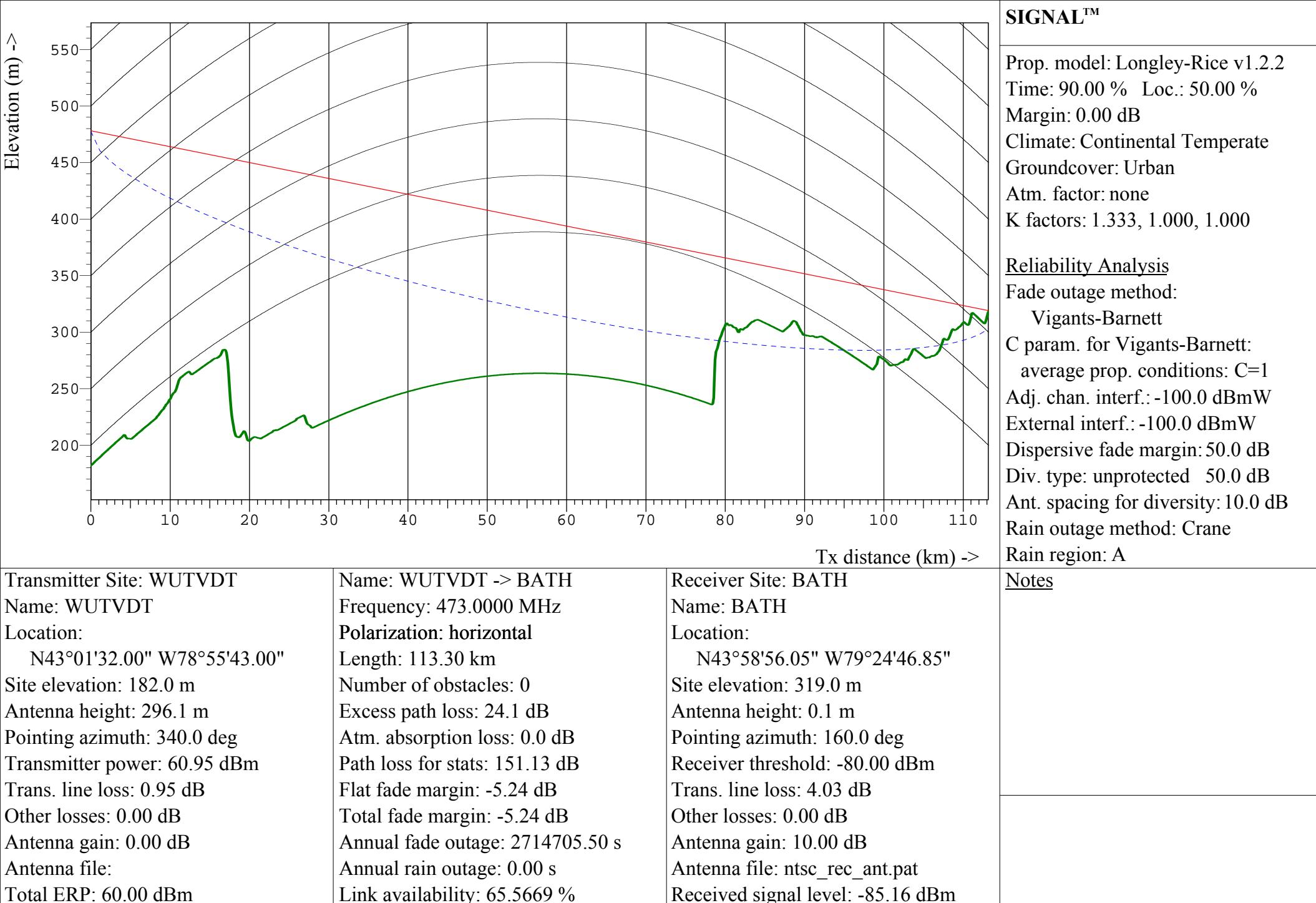


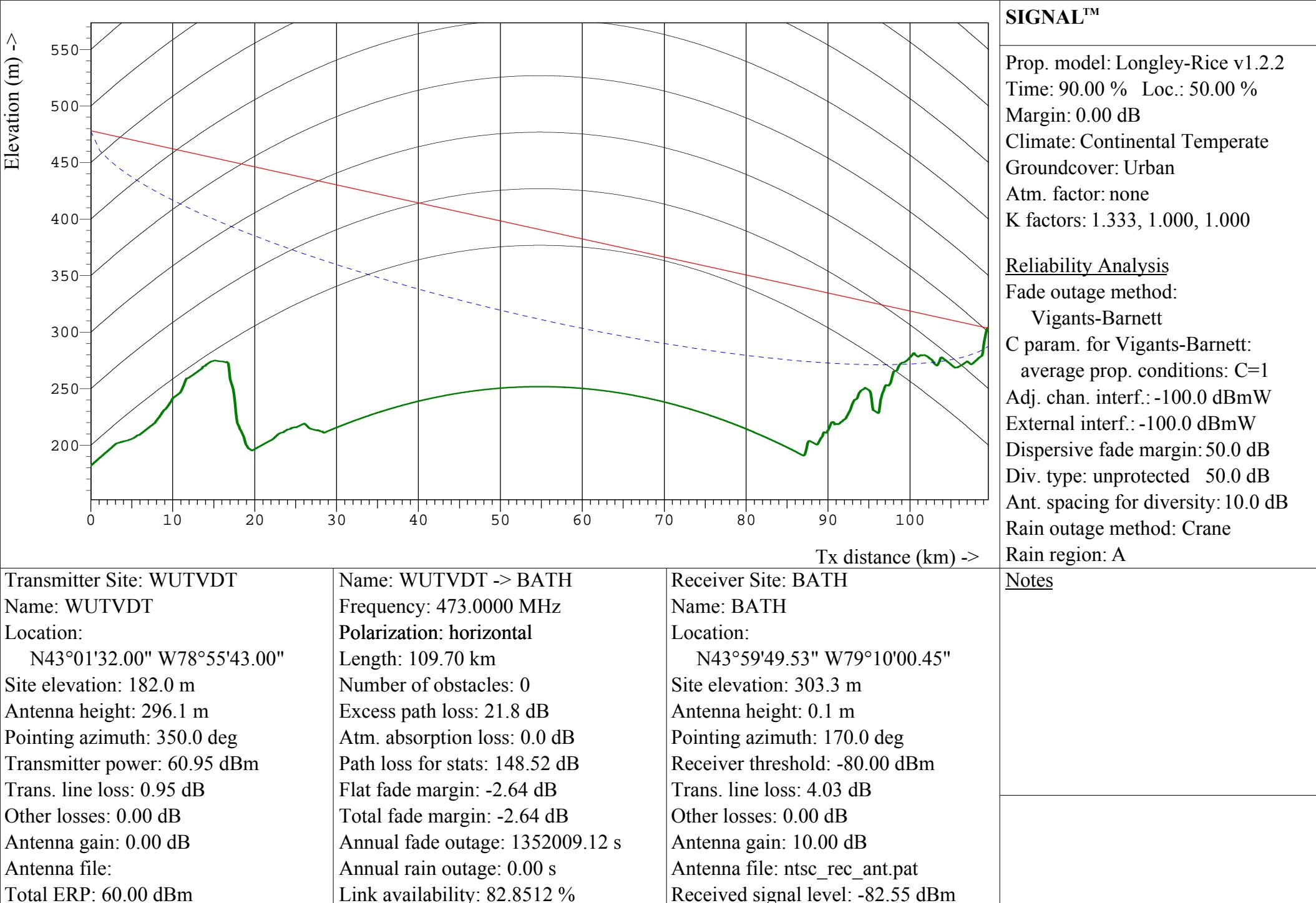
**SIGNAL™**

Prop. model: Longley-Rice v1.2.2  
 Time: 90.00 % Loc.: 50.00 %  
 Margin: 0.00 dB  
 Climate: Continental Temperate  
 Groundcover: Urban  
 Atm. factor: none  
 K factors: 1.333, 1.000, 1.000

**Reliability Analysis**  
 Fade outage method:  
     Vigants-Barnett  
 C param. for Vigants-Barnett:  
     average prop. conditions: C=1  
 Adj. chan. interf.: -100.0 dBmW  
 External interf.: -100.0 dBmW  
 Dispersive fade margin: 50.0 dB  
 Div. type: unprotected 50.0 dB  
 Ant. spacing for diversity: 10.0 dB  
 Rain outage method: Crane  
 Rain region: A

Transmitter Site: WUTVDT Name: WUTVDT Location: N43°01'32.00" W78°55'43.00" Site elevation: 182.0 m Antenna height: 296.1 m Pointing azimuth: 330.0 deg Transmitter power: 60.95 dBm Trans. line loss: 0.95 dB Other losses: 0.00 dB Antenna gain: 0.00 dB Antenna file: Total ERP: 60.00 dBm	Name: WUTVDT -> BATH Frequency: 473.0000 MHz Polarization: horizontal Length: 119.20 km Number of obstacles: 0 Excess path loss: 25.6 dB Atm. absorption loss: 0.0 dB Path loss for stats: 153.07 dB Flat fade margin: -7.19 dB Total fade margin: -7.19 dB Annual fade outage: 4948602.50 s Annual rain outage: 0.00 s Link availability: 37.2323 %	Receiver Site: BATH Name: BATH Location: N43°57'06.26" W79°40'23.76" Site elevation: 319.0 m Antenna height: 0.1 m Pointing azimuth: 150.0 deg Receiver threshold: -80.00 dBm Trans. line loss: 4.03 dB Other losses: 0.00 dB Antenna gain: 10.00 dB Antenna file: ntsc_rec_ant.pat Received signal level: -87.10 dBm	Notes
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# **APPENDIX B**

# Dielectric

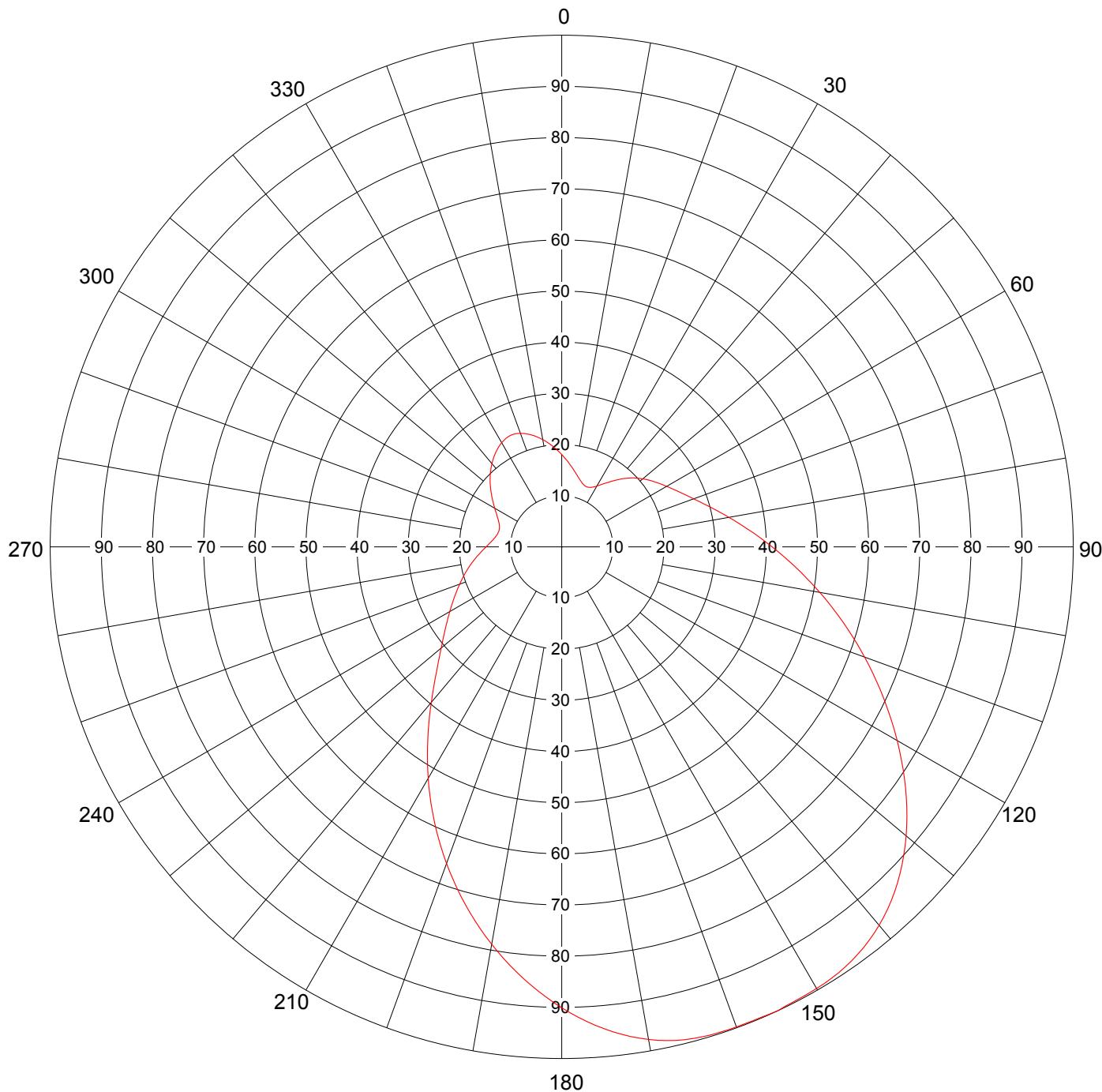
Date **11 May 2005**  
Call Letters **WUTV-DT** Channel **14**  
Location  
Customer  
Antenna Type **TLP-16E (C)**

## AZIMUTH PATTERN

Gain  
Calculated / Measured

**3.90 (5.91 dB)**  
**Calculated**

Frequency **473 MHz**  
Drawing # **TLP-E**



Remarks:



Date **11 May 2005**  
Call Letters **WUTV-DT** Channel **14**  
Location **Buffalo, New York**  
Customer  
Antenna Type **TLP-16E (C)**

### TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing # **TLP-E**

Angle	Field																
0	0.181	45	0.190	90	0.411	135	0.928	180	0.901	225	0.346	270	0.148	315	0.198		
1	0.177	46	0.194	91	0.420	136	0.937	181	0.891	226	0.338	271	0.146	316	0.201		
2	0.174	47	0.197	92	0.430	137	0.945	182	0.880	227	0.330	272	0.143	317	0.204		
3	0.171	48	0.201	93	0.439	138	0.952	183	0.870	228	0.322	273	0.141	318	0.207		
4	0.167	49	0.204	94	0.449	139	0.959	184	0.859	229	0.315	274	0.139	319	0.210		
5	0.164	50	0.207	95	0.459	140	0.965	185	0.848	230	0.308	275	0.137	320	0.212		
6	0.161	51	0.210	96	0.469	141	0.971	186	0.836	231	0.301	276	0.135	321	0.215		
7	0.158	52	0.213	97	0.480	142	0.976	187	0.825	232	0.295	277	0.133	322	0.218		
8	0.155	53	0.216	98	0.490	143	0.980	188	0.813	233	0.289	278	0.132	323	0.220		
9	0.152	54	0.219	99	0.501	144	0.984	189	0.801	234	0.283	279	0.130	324	0.223		
10	0.149	55	0.222	100	0.512	145	0.988	190	0.789	235	0.277	280	0.129	325	0.225		
11	0.146	56	0.225	101	0.523	146	0.991	191	0.776	236	0.272	281	0.128	326	0.227		
12	0.143	57	0.228	102	0.535	147	0.993	192	0.764	237	0.267	282	0.128	327	0.229		
13	0.141	58	0.231	103	0.546	148	0.995	193	0.751	238	0.262	283	0.127	328	0.231		
14	0.138	59	0.234	104	0.558	149	0.996	194	0.738	239	0.257	284	0.127	329	0.233		
15	0.136	60	0.237	105	0.570	150	0.996	195	0.725	240	0.253	285	0.127	330	0.235		
16	0.134	61	0.240	106	0.581	151	0.997	196	0.712	241	0.248	286	0.127	331	0.236		
17	0.132	62	0.243	107	0.593	152	0.997	197	0.699	242	0.244	287	0.127	332	0.238		
18	0.131	63	0.247	108	0.606	153	0.998	198	0.685	243	0.240	288	0.128	333	0.239		
19	0.129	64	0.250	109	0.618	154	0.998	199	0.672	244	0.235	289	0.129	334	0.239		
20	0.128	65	0.254	110	0.630	155	1.000	200	0.659	245	0.231	290	0.130	335	0.240		
21	0.128	66	0.258	111	0.643	156	0.999	201	0.645	246	0.227	291	0.131	336	0.240		
22	0.127	67	0.262	112	0.655	157	0.999	202	0.631	247	0.223	292	0.133	337	0.239		
23	0.127	68	0.266	113	0.668	158	0.999	203	0.618	248	0.220	293	0.135	338	0.239		
24	0.127	69	0.270	114	0.680	159	0.999	204	0.604	249	0.216	294	0.137	339	0.238		
25	0.128	70	0.275	115	0.693	160	0.998	205	0.590	250	0.212	295	0.139	340	0.236		
26	0.129	71	0.279	116	0.706	161	0.998	206	0.577	251	0.209	296	0.141	341	0.235		
27	0.131	72	0.284	117	0.719	162	0.998	207	0.563	252	0.205	297	0.143	342	0.233		
28	0.133	73	0.289	118	0.731	163	0.997	208	0.549	253	0.202	298	0.146	343	0.231		
29	0.135	74	0.295	119	0.744	164	0.996	209	0.536	254	0.198	299	0.149	344	0.229		
30	0.137	75	0.301	120	0.757	165	0.995	210	0.522	255	0.195	300	0.151	345	0.226		
31	0.140	76	0.306	121	0.770	166	0.993	211	0.509	256	0.191	301	0.154	346	0.224		
32	0.143	77	0.312	122	0.783	167	0.990	212	0.495	257	0.188	302	0.157	347	0.221		
33	0.146	78	0.319	123	0.795	168	0.986	213	0.482	258	0.185	303	0.160	348	0.219		
34	0.149	79	0.325	124	0.808	169	0.982	214	0.469	259	0.181	304	0.163	349	0.216		
35	0.153	80	0.332	125	0.820	170	0.978	215	0.457	260	0.178	305	0.166	350	0.213		
36	0.156	81	0.339	126	0.833	171	0.972	216	0.444	261	0.175	306	0.169	351	0.210		
37	0.160	82	0.346	127	0.845	172	0.966	217	0.432	262	0.172	307	0.172	352	0.207		
38	0.164	83	0.354	128	0.856	173	0.960	218	0.420	263	0.168	308	0.175	353	0.204		
39	0.168	84	0.361	129	0.868	174	0.953	219	0.408	264	0.165	309	0.179	354	0.200		
40	0.172	85	0.369	130	0.879	175	0.945	220	0.397	265	0.162	310	0.182	355	0.197		
41	0.175	86	0.377	131	0.890	176	0.937	221	0.386	266	0.159	311	0.185	356	0.194		
42	0.179	87	0.385	132	0.900	177	0.929	222	0.375	267	0.156	312	0.188	357	0.191		
43	0.183	88	0.394	133	0.910	178	0.920	223	0.365	268	0.153	313	0.191	358	0.187		
44	0.187	89	0.402	134	0.919	179	0.910	224	0.356	269	0.151	314	0.194	359	0.184		

Remarks:

Date **11-May-05**  
 Call Letters **WUTV** Channel **14**  
 Location **Buffalo, NY**  
 Customer  
 Antenna Type **TLP-16E (C)**

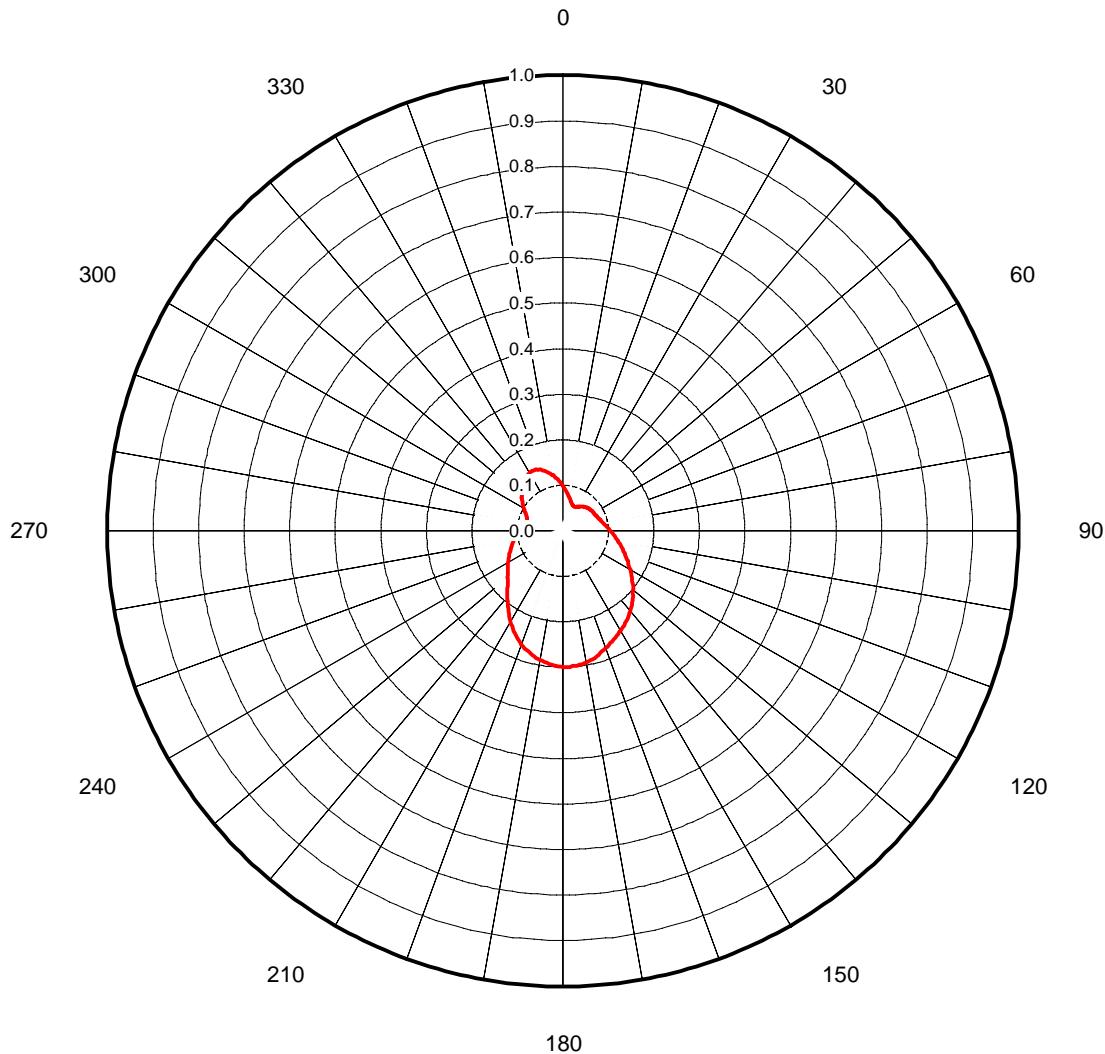
**AZIMUTH PATTERN:** **0.00° Depression Angle**

Gain  
 Calculated / Measured

**Calculated**

Frequency  
 Drawing #

**473.00 MHz**  
**TLP-E**



Mech. Tilt: **0.50°**  
 @  
 Azimuth: **120 deg**



Date  
Call Letters  
Location  
Customer  
Antenna Type

**11-May-05**  
**WUTV**  
**Buffalo, NY**  
**TLP-16E (C)**

Channel

**14**

**TABULATION OF AZIMUTH PATTERN: 0.00° Depression Angle**

Azimuth Pattern Drawing #: **TLP-E**

Angle	Field																
0	0.099	45	0.073	90	0.104	135	0.216	180	0.299	225	0.172	270	0.092	315	0.127		
1	0.097	46	0.074	91	0.106	136	0.219	181	0.298	226	0.169	271	0.091	316	0.129		
2	0.094	47	0.074	92	0.107	137	0.222	182	0.297	227	0.166	272	0.090	317	0.131		
3	0.092	48	0.075	93	0.109	138	0.224	183	0.297	228	0.163	273	0.089	318	0.133		
4	0.089	49	0.075	94	0.111	139	0.227	184	0.296	229	0.161	274	0.088	319	0.134		
5	0.087	50	0.076	95	0.113	140	0.230	185	0.295	230	0.158	275	0.086	320	0.136		
6	0.085	51	0.076	96	0.114	141	0.232	186	0.294	231	0.156	276	0.086	321	0.137		
7	0.083	52	0.076	97	0.116	142	0.235	187	0.292	232	0.154	277	0.085	322	0.139		
8	0.081	53	0.076	98	0.118	143	0.237	188	0.291	233	0.151	278	0.084	323	0.140		
9	0.079	54	0.077	99	0.120	144	0.240	189	0.290	234	0.149	279	0.083	324	0.141		
10	0.077	55	0.077	100	0.122	145	0.242	190	0.288	235	0.147	280	0.083	325	0.142		
11	0.075	56	0.077	101	0.124	146	0.244	191	0.286	236	0.146	281	0.082	326	0.143		
12	0.073	57	0.078	102	0.126	147	0.247	192	0.284	237	0.144	282	0.082	327	0.144		
13	0.071	58	0.078	103	0.128	148	0.249	193	0.282	238	0.142	283	0.082	328	0.145		
14	0.069	59	0.078	104	0.130	149	0.251	194	0.280	239	0.140	284	0.082	329	0.146		
15	0.068	60	0.078	105	0.132	150	0.253	195	0.278	240	0.139	285	0.082	330	0.147		
16	0.066	61	0.079	106	0.135	151	0.255	196	0.276	241	0.137	286	0.082	331	0.147		
17	0.065	62	0.079	107	0.137	152	0.257	197	0.273	242	0.135	287	0.082	332	0.148		
18	0.063	63	0.079	108	0.139	153	0.259	198	0.271	243	0.134	288	0.083	333	0.148		
19	0.062	64	0.080	109	0.142	154	0.261	199	0.268	244	0.132	289	0.084	334	0.148		
20	0.061	65	0.080	110	0.144	155	0.263	200	0.265	245	0.130	290	0.084	335	0.147		
21	0.060	66	0.080	111	0.147	156	0.265	201	0.262	246	0.129	291	0.085	336	0.147		
22	0.060	67	0.081	112	0.149	157	0.267	202	0.259	247	0.127	292	0.086	337	0.146		
23	0.059	68	0.081	113	0.152	158	0.270	203	0.255	248	0.126	293	0.088	338	0.145		
24	0.059	69	0.082	114	0.154	159	0.272	204	0.252	249	0.124	294	0.089	339	0.144		
25	0.059	70	0.082	115	0.157	160	0.274	205	0.249	250	0.123	295	0.090	340	0.143		
26	0.059	71	0.083	116	0.159	161	0.276	206	0.245	251	0.121	296	0.092	341	0.141		
27	0.059	72	0.084	117	0.162	162	0.279	207	0.241	252	0.120	297	0.093	342	0.140		
28	0.059	73	0.085	118	0.165	163	0.281	208	0.238	253	0.118	298	0.095	343	0.138		
29	0.060	74	0.085	119	0.168	164	0.283	209	0.234	254	0.117	299	0.097	344	0.136		
30	0.060	75	0.086	120	0.171	165	0.285	210	0.230	255	0.115	300	0.099	345	0.134		
31	0.061	76	0.087	121	0.174	166	0.287	211	0.226	256	0.114	301	0.100	346	0.132		
32	0.062	77	0.088	122	0.177	167	0.289	212	0.222	257	0.112	302	0.102	347	0.130		
33	0.063	78	0.089	123	0.180	168	0.291	213	0.218	258	0.111	303	0.104	348	0.128		
34	0.064	79	0.090	124	0.183	169	0.292	214	0.214	259	0.109	304	0.106	349	0.125		
35	0.064	80	0.091	125	0.186	170	0.294	215	0.209	260	0.108	305	0.108	350	0.123		
36	0.065	81	0.092	126	0.189	171	0.295	216	0.205	261	0.106	306	0.110	351	0.121		
37	0.066	82	0.093	127	0.192	172	0.296	217	0.201	262	0.104	307	0.112	352	0.118		
38	0.067	83	0.095	128	0.195	173	0.297	218	0.197	263	0.103	308	0.114	353	0.116		
39	0.068	84	0.096	129	0.198	174	0.297	219	0.193	264	0.101	309	0.116	354	0.114		
40	0.069	85	0.097	130	0.201	175	0.298	220	0.190	265	0.100	310	0.118	355	0.111		
41	0.070	86	0.099	131	0.204	176	0.298	221	0.186	266	0.098	311	0.120	356	0.109		
42	0.071	87	0.100	132	0.207	177	0.299	222	0.182	267	0.097	312	0.122	357	0.106		
43	0.072	88	0.101	133	0.210	178	0.299	223	0.179	268	0.095	313	0.124	358	0.104		
44	0.072	89	0.103	134	0.213	179	0.299	224	0.175	269	0.094	314	0.126	359	0.101		

Date  
 Call Letters  
 Location  
 Customer  
 Antenna Type

**11-May-05**  
**WUTV**  
**Buffalo, NY**  
**TLP-16E (C)**

Channel **14**

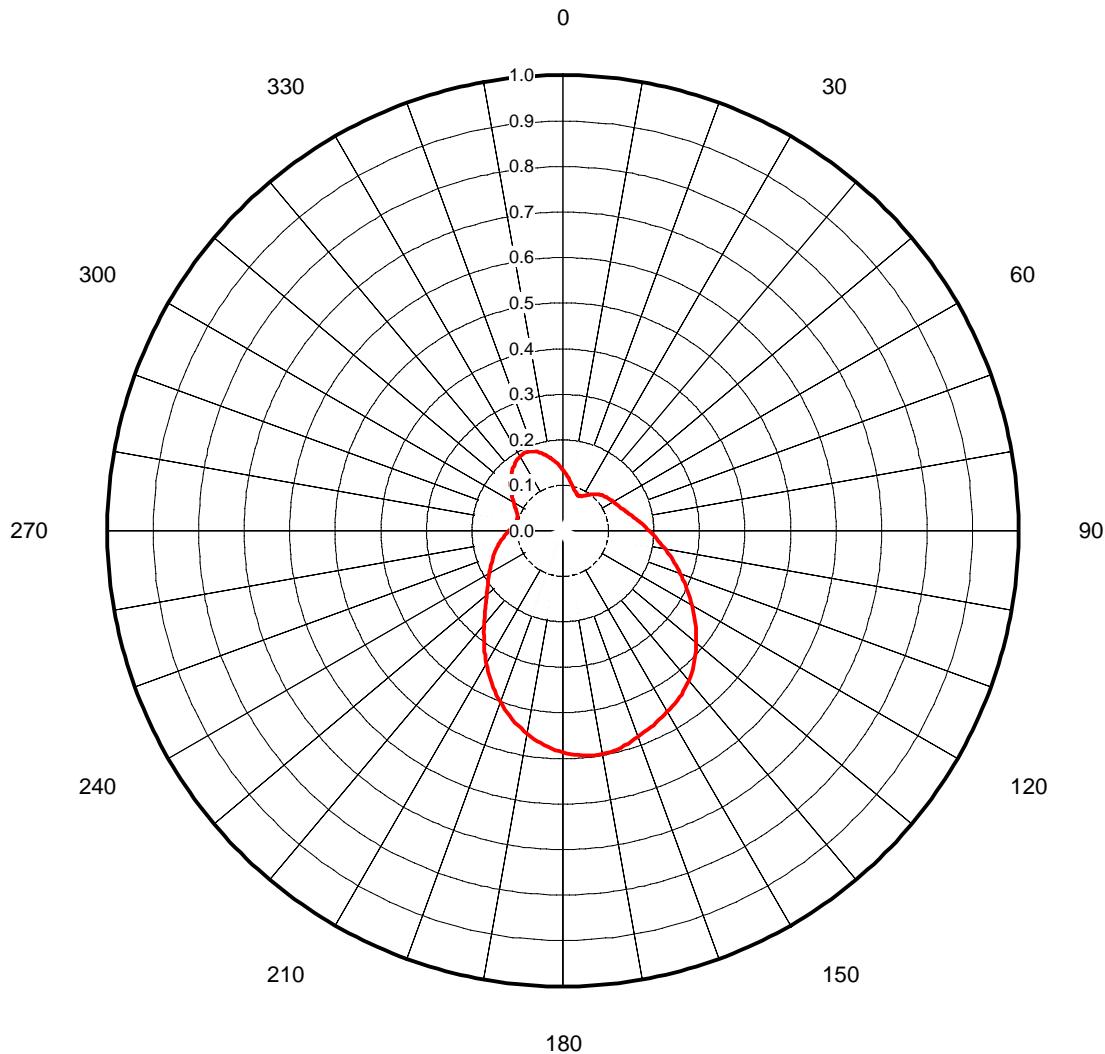
**AZIMUTH PATTERN:** **0.48° Depression Angle**

Gain  
 Calculated / Measured

**Calculated**

Frequency  
 Drawing #

**473.00 MHz**  
**TLP-E**



Mech. Tilt: 0.50°  
 @  
 Azimuth: 120 deg



Date  
Call Letters  
Location  
Customer  
Antenna Type

**11-May-05**  
**WUTV**  
**Buffalo, NY**  
**TLP-16E (C)**

Channel

**14**

## **TABULATION OF AZIMUTH PATTERN:      0.48° Depression Angle**

Azimuth Pattern Drawing #: **TLP-E**

Angle	Field																
0	0.133	45	0.112	90	0.189	135	0.408	180	0.486	225	0.240	270	0.119	315	0.162		
1	0.130	46	0.114	91	0.193	136	0.412	181	0.484	226	0.236	271	0.117	316	0.164		
2	0.128	47	0.115	92	0.196	137	0.417	182	0.481	227	0.231	272	0.115	317	0.166		
3	0.125	48	0.116	93	0.200	138	0.421	183	0.478	228	0.226	273	0.114	318	0.169		
4	0.122	49	0.117	94	0.204	139	0.425	184	0.475	229	0.222	274	0.112	319	0.171		
5	0.119	50	0.119	95	0.207	140	0.429	185	0.472	230	0.218	275	0.111	320	0.173		
6	0.116	51	0.120	96	0.211	141	0.433	186	0.468	231	0.215	276	0.109	321	0.175		
7	0.113	52	0.121	97	0.215	142	0.437	187	0.464	232	0.211	277	0.108	322	0.177		
8	0.111	53	0.121	98	0.219	143	0.440	188	0.460	233	0.208	278	0.107	323	0.179		
9	0.108	54	0.122	99	0.224	144	0.443	189	0.456	234	0.204	279	0.106	324	0.180		
10	0.106	55	0.123	100	0.228	145	0.446	190	0.452	235	0.201	280	0.105	325	0.182		
11	0.103	56	0.124	101	0.232	146	0.449	191	0.448	236	0.198	281	0.105	326	0.184		
12	0.101	57	0.125	102	0.236	147	0.452	192	0.443	237	0.195	282	0.104	327	0.185		
13	0.099	58	0.126	103	0.241	148	0.454	193	0.438	238	0.192	283	0.104	328	0.186		
14	0.097	59	0.127	104	0.246	149	0.456	194	0.433	239	0.190	284	0.104	329	0.187		
15	0.095	60	0.128	105	0.250	150	0.459	195	0.428	240	0.187	285	0.104	330	0.188		
16	0.093	61	0.129	106	0.255	151	0.461	196	0.423	241	0.184	286	0.104	331	0.189		
17	0.091	62	0.130	107	0.260	152	0.463	197	0.418	242	0.182	287	0.104	332	0.190		
18	0.089	63	0.131	108	0.264	153	0.465	198	0.412	243	0.179	288	0.105	333	0.190		
19	0.088	64	0.132	109	0.269	154	0.467	199	0.407	244	0.176	289	0.106	334	0.191		
20	0.087	65	0.133	110	0.274	155	0.470	200	0.401	245	0.174	290	0.107	335	0.191		
21	0.086	66	0.134	111	0.279	156	0.472	201	0.395	246	0.172	291	0.108	336	0.190		
22	0.085	67	0.135	112	0.284	157	0.474	202	0.389	247	0.169	292	0.109	337	0.189		
23	0.085	68	0.137	113	0.289	158	0.477	203	0.382	248	0.167	293	0.111	338	0.188		
24	0.085	69	0.138	114	0.295	159	0.479	204	0.376	249	0.165	294	0.112	339	0.187		
25	0.085	70	0.140	115	0.300	160	0.481	205	0.370	250	0.162	295	0.114	340	0.186		
26	0.085	71	0.141	116	0.305	161	0.484	206	0.363	251	0.160	296	0.116	341	0.184		
27	0.086	72	0.143	117	0.310	162	0.486	207	0.356	252	0.158	297	0.118	342	0.182		
28	0.086	73	0.145	118	0.316	163	0.488	208	0.350	253	0.156	298	0.120	343	0.180		
29	0.087	74	0.147	119	0.321	164	0.491	209	0.343	254	0.153	299	0.122	344	0.178		
30	0.088	75	0.149	120	0.327	165	0.492	210	0.336	255	0.151	300	0.125	345	0.176		
31	0.090	76	0.151	121	0.332	166	0.494	211	0.329	256	0.149	301	0.127	346	0.173		
32	0.091	77	0.153	122	0.338	167	0.496	212	0.322	257	0.147	302	0.129	347	0.171		
33	0.092	78	0.155	123	0.344	168	0.497	213	0.315	258	0.144	303	0.132	348	0.168		
34	0.094	79	0.158	124	0.349	169	0.497	214	0.308	259	0.142	304	0.134	349	0.166		
35	0.096	80	0.160	125	0.355	170	0.498	215	0.302	260	0.140	305	0.137	350	0.163		
36	0.097	81	0.163	126	0.360	171	0.498	216	0.295	261	0.138	306	0.139	351	0.160		
37	0.099	82	0.165	127	0.366	172	0.497	217	0.288	262	0.135	307	0.142	352	0.157		
38	0.101	83	0.168	128	0.371	173	0.497	218	0.282	263	0.133	308	0.144	353	0.154		
39	0.103	84	0.171	129	0.377	174	0.496	219	0.275	264	0.131	309	0.147	354	0.151		
40	0.104	85	0.174	130	0.382	175	0.495	220	0.269	265	0.129	310	0.149	355	0.148		
41	0.106	86	0.177	131	0.388	176	0.494	221	0.263	266	0.127	311	0.152	356	0.145		
42	0.108	87	0.180	132	0.393	177	0.492	222	0.257	267	0.125	312	0.154	357	0.142		
43	0.109	88	0.183	133	0.398	178	0.490	223	0.251	268	0.123	313	0.157	358	0.139		
44	0.111	89	0.186	134	0.403	179	0.488	224	0.246	269	0.121	314	0.159	359	0.136		

Date **11-May-05**  
 Call Letters **WUTV** Channel **14**  
 Location **Buffalo, NY**  
 Customer  
 Antenna Type **TLP-16E (C)**

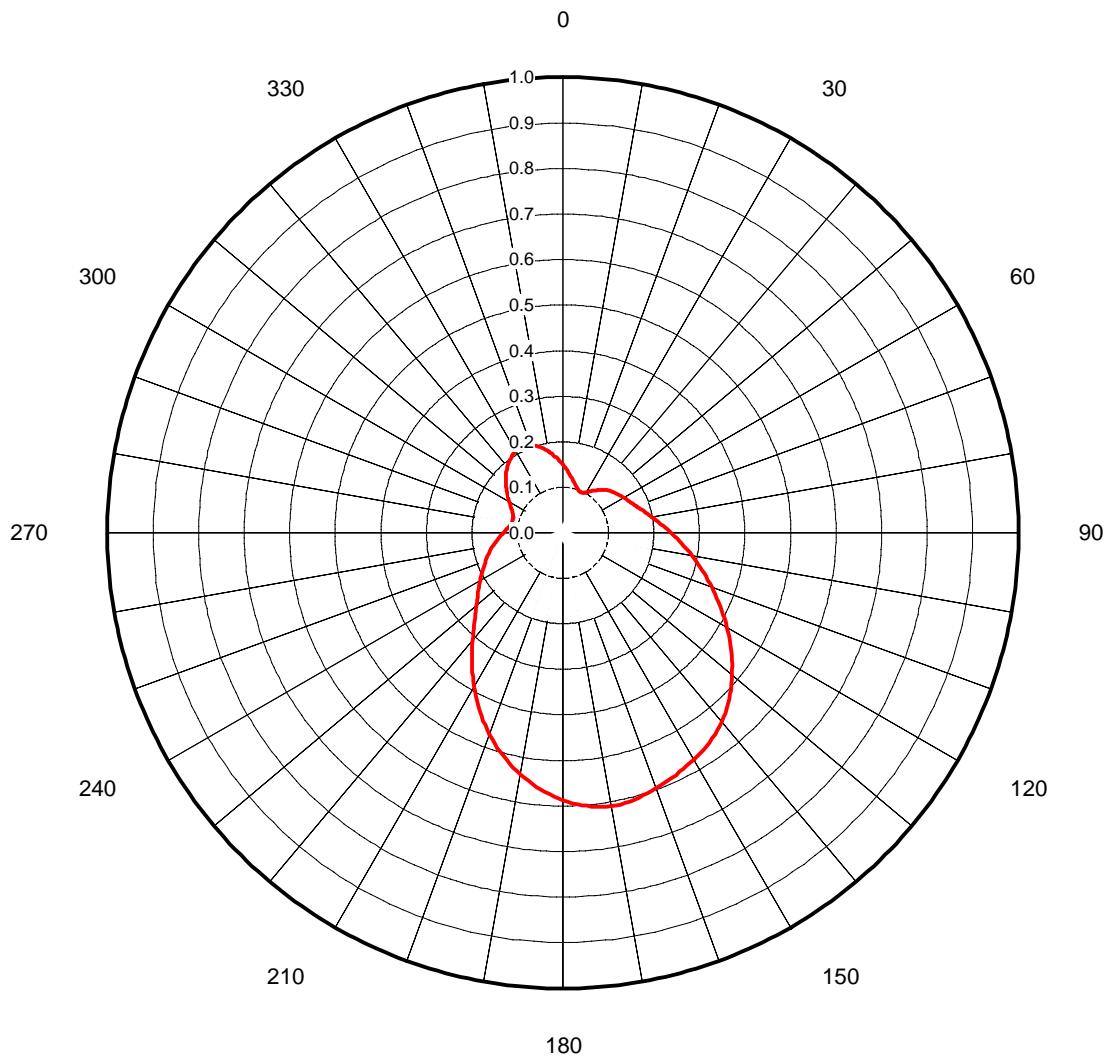
**AZIMUTH PATTERN:** **0.75° Depression Angle**

Gain  
 Calculated / Measured

**Calculated**

Frequency  
 Drawing #

**473.00 MHz**  
**TLP-E**



Mech. Tilt: **0.50°**  
 @  
 Azimuth: **120 deg**



Date  
Call Letters  
Location  
Customer  
Antenna Type

**11-May-05**  
**WUTV**  
**Buffalo, NY**  
**TLP-16E (C)**

Channel

**14**

**TABULATION OF AZIMUTH PATTERN: 0.75° Depression Angle**

Azimuth Pattern Drawing #: **TLP-E**

Angle	Field																
0	0.150	45	0.133	90	0.237	135	0.516	180	0.587	225	0.274	270	0.131	315	0.177		
1	0.147	46	0.135	91	0.242	136	0.521	181	0.583	226	0.268	271	0.128	316	0.179		
2	0.143	47	0.136	92	0.246	137	0.527	182	0.579	227	0.263	272	0.127	317	0.182		
3	0.140	48	0.138	93	0.251	138	0.532	183	0.575	228	0.257	273	0.125	318	0.184		
4	0.137	49	0.140	94	0.256	139	0.537	184	0.570	229	0.252	274	0.123	319	0.187		
5	0.134	50	0.141	95	0.261	140	0.542	185	0.565	230	0.248	275	0.121	320	0.189		
6	0.131	51	0.143	96	0.266	141	0.546	186	0.560	231	0.243	276	0.120	321	0.191		
7	0.128	52	0.144	97	0.271	142	0.550	187	0.555	232	0.239	277	0.118	322	0.194		
8	0.125	53	0.145	98	0.276	143	0.554	188	0.550	233	0.235	278	0.117	323	0.196		
9	0.122	54	0.147	99	0.282	144	0.558	189	0.544	234	0.231	279	0.116	324	0.198		
10	0.120	55	0.148	100	0.287	145	0.561	190	0.538	235	0.227	280	0.115	325	0.200		
11	0.117	56	0.149	101	0.293	146	0.564	191	0.532	236	0.223	281	0.114	326	0.201		
12	0.115	57	0.150	102	0.299	147	0.567	192	0.526	237	0.220	282	0.114	327	0.203		
13	0.112	58	0.152	103	0.305	148	0.570	193	0.520	238	0.216	283	0.113	328	0.205		
14	0.110	59	0.153	104	0.310	149	0.572	194	0.513	239	0.213	284	0.113	329	0.206		
15	0.108	60	0.154	105	0.316	150	0.575	195	0.506	240	0.210	285	0.113	330	0.207		
16	0.106	61	0.156	106	0.323	151	0.577	196	0.499	241	0.206	286	0.114	331	0.208		
17	0.104	62	0.157	107	0.329	152	0.579	197	0.492	242	0.203	287	0.114	332	0.209		
18	0.102	63	0.158	108	0.335	153	0.581	198	0.485	243	0.200	288	0.115	333	0.210		
19	0.101	64	0.160	109	0.341	154	0.583	199	0.478	244	0.197	289	0.116	334	0.210		
20	0.100	65	0.162	110	0.348	155	0.586	200	0.470	245	0.194	290	0.117	335	0.210		
21	0.099	66	0.163	111	0.354	156	0.588	201	0.463	246	0.191	291	0.118	336	0.210		
22	0.098	67	0.165	112	0.361	157	0.590	202	0.455	247	0.189	292	0.119	337	0.209		
23	0.098	68	0.167	113	0.367	158	0.592	203	0.447	248	0.186	293	0.121	338	0.208		
24	0.098	69	0.169	114	0.374	159	0.594	204	0.439	249	0.183	294	0.123	339	0.207		
25	0.098	70	0.171	115	0.381	160	0.597	205	0.431	250	0.181	295	0.125	340	0.205		
26	0.098	71	0.173	116	0.387	161	0.599	206	0.423	251	0.178	296	0.127	341	0.203		
27	0.099	72	0.176	117	0.394	162	0.601	207	0.415	252	0.175	297	0.129	342	0.201		
28	0.100	73	0.178	118	0.401	163	0.603	208	0.407	253	0.173	298	0.131	343	0.199		
29	0.101	74	0.181	119	0.408	164	0.605	209	0.398	254	0.170	299	0.134	344	0.197		
30	0.103	75	0.183	120	0.415	165	0.607	210	0.390	255	0.168	300	0.136	345	0.195		
31	0.104	76	0.186	121	0.422	166	0.608	211	0.381	256	0.165	301	0.138	346	0.192		
32	0.106	77	0.189	122	0.429	167	0.609	212	0.373	257	0.162	302	0.141	347	0.190		
33	0.108	78	0.192	123	0.436	168	0.609	213	0.364	258	0.160	303	0.144	348	0.187		
34	0.110	79	0.195	124	0.444	169	0.609	214	0.356	259	0.157	304	0.146	349	0.184		
35	0.112	80	0.198	125	0.451	170	0.609	215	0.348	260	0.155	305	0.149	350	0.181		
36	0.114	81	0.202	126	0.458	171	0.608	216	0.340	261	0.152	306	0.152	351	0.178		
37	0.116	82	0.205	127	0.464	172	0.607	217	0.332	262	0.150	307	0.155	352	0.175		
38	0.118	83	0.209	128	0.471	173	0.606	218	0.324	263	0.147	308	0.157	353	0.172		
39	0.120	84	0.213	129	0.478	174	0.604	219	0.316	264	0.145	309	0.160	354	0.169		
40	0.123	85	0.216	130	0.485	175	0.602	220	0.308	265	0.142	310	0.163	355	0.166		
41	0.125	86	0.220	131	0.491	176	0.599	221	0.301	266	0.140	311	0.166	356	0.163		
42	0.127	87	0.224	132	0.498	177	0.597	222	0.294	267	0.137	312	0.169	357	0.159		
43	0.129	88	0.228	133	0.504	178	0.594	223	0.287	268	0.135	313	0.171	358	0.156		
44	0.131	89	0.233	134	0.510	179	0.590	224	0.280	269	0.133	314	0.174	359	0.153		

Date **11-May-05**  
 Call Letters **WUTV** Channel **14**  
 Location **Buffalo, NY**  
 Customer  
 Antenna Type **TLP-16E (C)**

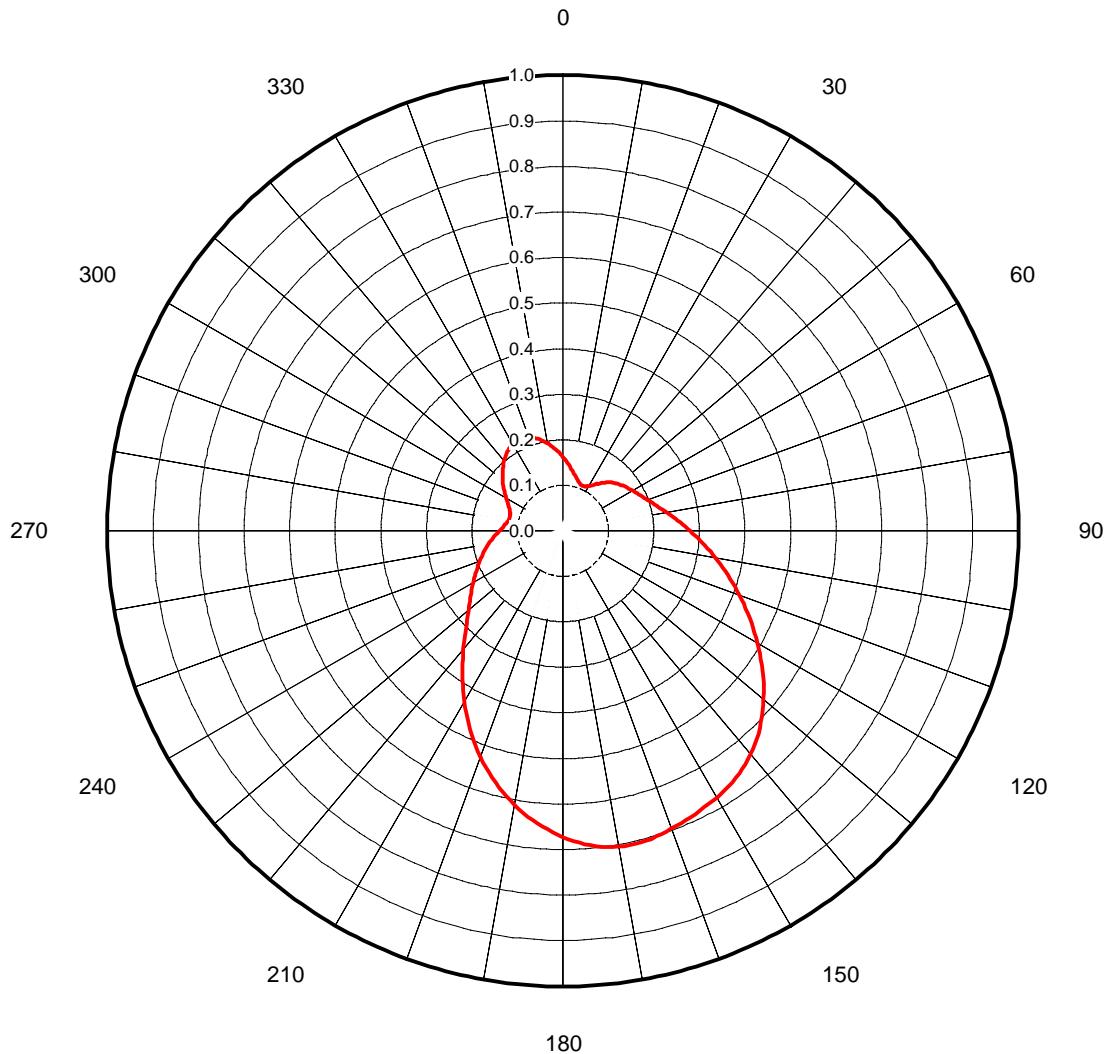
**AZIMUTH PATTERN:** **1.00° Depression Angle**

Gain  
 Calculated / Measured

**Calculated**

Frequency  
 Drawing #

**473.00 MHz**  
**TLP-E**



Mech. Tilt: **0.50°**  
 @  
 Azimuth: **120 deg**



Date  
Call Letters  
Location  
Customer  
Antenna Type

**11-May-05**  
**WUTV**  
**Buffalo, NY**  
**TLP-16E (C)**

Channel

**14**

## **TABULATION OF AZIMUTH PATTERN: 1.00° Depression Angle**

Azimuth Pattern Drawing #: **TLP-E**

Angle	Field																
0	0.162	45	0.150	90	0.279	135	0.611	180	0.672	225	0.301	270	0.139	315	0.187		
1	0.159	46	0.152	91	0.284	136	0.618	181	0.667	226	0.294	271	0.137	316	0.190		
2	0.156	47	0.154	92	0.290	137	0.624	182	0.662	227	0.288	272	0.135	317	0.193		
3	0.152	48	0.156	93	0.296	138	0.630	183	0.656	228	0.281	273	0.133	318	0.196		
4	0.149	49	0.158	94	0.302	139	0.635	184	0.651	229	0.276	274	0.131	319	0.198		
5	0.146	50	0.160	95	0.308	140	0.640	185	0.645	230	0.270	275	0.129	320	0.201		
6	0.143	51	0.162	96	0.314	141	0.645	186	0.638	231	0.265	276	0.127	321	0.203		
7	0.140	52	0.164	97	0.320	142	0.650	187	0.632	232	0.260	277	0.126	322	0.206		
8	0.137	53	0.165	98	0.327	143	0.654	188	0.625	233	0.256	278	0.124	323	0.208		
9	0.134	54	0.167	99	0.333	144	0.658	189	0.618	234	0.251	279	0.123	324	0.210		
10	0.131	55	0.169	100	0.340	145	0.662	190	0.611	235	0.247	280	0.122	325	0.212		
11	0.128	56	0.170	101	0.347	146	0.665	191	0.603	236	0.243	281	0.121	326	0.214		
12	0.125	57	0.172	102	0.354	147	0.668	192	0.596	237	0.238	282	0.121	327	0.216		
13	0.123	58	0.173	103	0.361	148	0.671	193	0.588	238	0.235	283	0.120	328	0.218		
14	0.120	59	0.175	104	0.368	149	0.673	194	0.580	239	0.231	284	0.120	329	0.219		
15	0.118	60	0.177	105	0.375	150	0.675	195	0.572	240	0.227	285	0.120	330	0.220		
16	0.116	61	0.178	106	0.382	151	0.677	196	0.563	241	0.223	286	0.120	331	0.222		
17	0.114	62	0.180	107	0.390	152	0.679	197	0.555	242	0.220	287	0.121	332	0.223		
18	0.112	63	0.182	108	0.397	153	0.682	198	0.546	243	0.216	288	0.122	333	0.223		
19	0.111	64	0.184	109	0.405	154	0.684	199	0.537	244	0.213	289	0.122	334	0.224		
20	0.110	65	0.186	110	0.412	155	0.687	200	0.528	245	0.210	290	0.124	335	0.224		
21	0.109	66	0.188	111	0.420	156	0.688	201	0.519	246	0.207	291	0.125	336	0.224		
22	0.108	67	0.190	112	0.428	157	0.690	202	0.510	247	0.203	292	0.126	337	0.223		
23	0.108	68	0.193	113	0.436	158	0.692	203	0.501	248	0.200	293	0.128	338	0.222		
24	0.108	69	0.195	114	0.444	159	0.694	204	0.491	249	0.197	294	0.130	339	0.221		
25	0.108	70	0.198	115	0.452	160	0.696	205	0.482	250	0.194	295	0.132	340	0.219		
26	0.109	71	0.200	116	0.460	161	0.698	206	0.472	251	0.191	296	0.134	341	0.217		
27	0.110	72	0.203	117	0.468	162	0.700	207	0.462	252	0.188	297	0.136	342	0.216		
28	0.111	73	0.206	118	0.477	163	0.701	208	0.453	253	0.185	298	0.139	343	0.213		
29	0.112	74	0.209	119	0.485	164	0.703	209	0.443	254	0.182	299	0.141	344	0.211		
30	0.114	75	0.213	120	0.493	165	0.704	210	0.433	255	0.180	300	0.144	345	0.209		
31	0.116	76	0.216	121	0.502	166	0.705	211	0.423	256	0.177	301	0.147	346	0.206		
32	0.118	77	0.220	122	0.510	167	0.706	212	0.413	257	0.174	302	0.149	347	0.203		
33	0.120	78	0.224	123	0.518	168	0.706	213	0.404	258	0.171	303	0.152	348	0.201		
34	0.122	79	0.227	124	0.527	169	0.705	214	0.394	259	0.168	304	0.155	349	0.198		
35	0.125	80	0.231	125	0.535	170	0.704	215	0.385	260	0.165	305	0.158	350	0.195		
36	0.127	81	0.235	126	0.543	171	0.703	216	0.375	261	0.163	306	0.161	351	0.192		
37	0.130	82	0.240	127	0.551	172	0.701	217	0.366	262	0.160	307	0.164	352	0.189		
38	0.132	83	0.244	128	0.559	173	0.699	218	0.357	263	0.157	308	0.167	353	0.185		
39	0.135	84	0.249	129	0.567	174	0.696	219	0.348	264	0.154	309	0.170	354	0.182		
40	0.138	85	0.253	130	0.575	175	0.693	220	0.339	265	0.151	310	0.173	355	0.179		
41	0.140	86	0.258	131	0.583	176	0.690	221	0.331	266	0.149	311	0.176	356	0.176		
42	0.143	87	0.263	132	0.590	177	0.686	222	0.323	267	0.146	312	0.179	357	0.172		
43	0.145	88	0.268	133	0.597	178	0.682	223	0.315	268	0.144	313	0.182	358	0.169		
44	0.148	89	0.273	134	0.604	179	0.677	224	0.308	269	0.141	314	0.184	359	0.166		

Date **11-May-05**  
 Call Letters **WUTV**  
 Location **Buffalo, NY**  
 Customer  
 Antenna Type **TLP-16E (C)**  
 Channel **14**

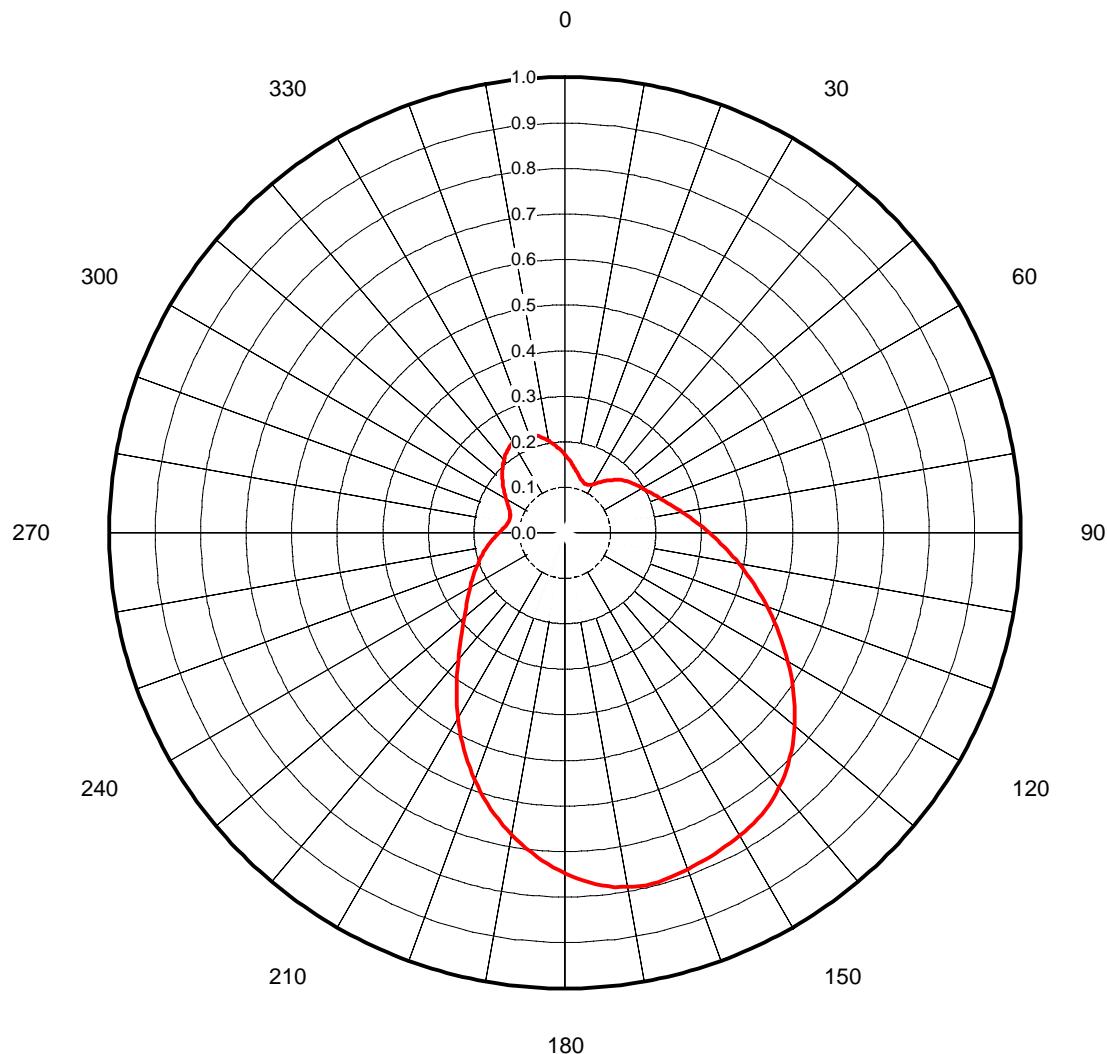
**AZIMUTH PATTERN:** **1.25° Depression Angle**

Gain  
Calculated / Measured

**Calculated**

Frequency  
Drawing #

**473.00 MHz**  
**TLP-E**



Mech. Tilt: **0.50°**  
 @  
 Azimuth: **120 deg**



Date  
Call Letters  
Location  
Customer  
Antenna Type

**11-May-05**  
**WUTV**  
**Buffalo, NY**  
**TLP-16E (C)**

Channel

**14**

## **TABULATION OF AZIMUTH PATTERN:      1.25° Depression Angle**

Azimuth Pattern Drawing #: **TLP-E**

Angle	Field																
0	0.172	45	0.165	90	0.317	135	0.699	180	0.747	225	0.321	270	0.145	315	0.194		
1	0.168	46	0.167	91	0.323	136	0.706	181	0.741	226	0.314	271	0.142	316	0.197		
2	0.165	47	0.170	92	0.330	137	0.713	182	0.734	227	0.307	272	0.140	317	0.200		
3	0.161	48	0.172	93	0.336	138	0.719	183	0.727	228	0.300	273	0.138	318	0.203		
4	0.158	49	0.174	94	0.343	139	0.725	184	0.720	229	0.294	274	0.136	319	0.206		
5	0.155	50	0.176	95	0.350	140	0.731	185	0.713	230	0.288	275	0.134	320	0.208		
6	0.152	51	0.178	96	0.358	141	0.736	186	0.705	231	0.282	276	0.132	321	0.211		
7	0.148	52	0.180	97	0.365	142	0.741	187	0.698	232	0.277	277	0.131	322	0.214		
8	0.145	53	0.182	98	0.372	143	0.746	188	0.690	233	0.272	278	0.129	323	0.216		
9	0.142	54	0.184	99	0.380	144	0.750	189	0.681	234	0.267	279	0.128	324	0.218		
10	0.139	55	0.186	100	0.388	145	0.754	190	0.673	235	0.262	280	0.127	325	0.220		
11	0.136	56	0.188	101	0.396	146	0.757	191	0.664	236	0.257	281	0.126	326	0.223		
12	0.134	57	0.190	102	0.404	147	0.760	192	0.655	237	0.253	282	0.125	327	0.224		
13	0.131	58	0.192	103	0.412	148	0.763	193	0.646	238	0.249	283	0.125	328	0.226		
14	0.129	59	0.194	104	0.420	149	0.765	194	0.637	239	0.244	284	0.125	329	0.228		
15	0.126	60	0.196	105	0.429	150	0.767	195	0.627	240	0.240	285	0.125	330	0.229		
16	0.124	61	0.198	106	0.437	151	0.769	196	0.618	241	0.236	286	0.125	331	0.231		
17	0.122	62	0.201	107	0.446	152	0.771	197	0.608	242	0.232	287	0.125	332	0.232		
18	0.120	63	0.203	108	0.454	153	0.773	198	0.598	243	0.229	288	0.126	333	0.233		
19	0.119	64	0.205	109	0.463	154	0.775	199	0.588	244	0.225	289	0.127	334	0.233		
20	0.118	65	0.208	110	0.472	155	0.778	200	0.577	245	0.221	290	0.128	335	0.234		
21	0.117	66	0.210	111	0.481	156	0.779	201	0.567	246	0.218	291	0.129	336	0.233		
22	0.116	67	0.213	112	0.490	157	0.781	202	0.556	247	0.214	292	0.131	337	0.233		
23	0.116	68	0.216	113	0.499	158	0.782	203	0.546	248	0.211	293	0.133	338	0.232		
24	0.116	69	0.219	114	0.508	159	0.784	204	0.535	249	0.208	294	0.135	339	0.231		
25	0.117	70	0.222	115	0.518	160	0.786	205	0.524	250	0.204	295	0.137	340	0.229		
26	0.117	71	0.225	116	0.527	161	0.788	206	0.513	251	0.201	296	0.139	341	0.228		
27	0.118	72	0.228	117	0.537	162	0.789	207	0.502	252	0.198	297	0.141	342	0.226		
28	0.120	73	0.232	118	0.546	163	0.791	208	0.491	253	0.195	298	0.144	343	0.224		
29	0.121	74	0.236	119	0.556	164	0.792	209	0.480	254	0.192	299	0.146	344	0.221		
30	0.123	75	0.240	120	0.565	165	0.793	210	0.469	255	0.188	300	0.149	345	0.219		
31	0.126	76	0.244	121	0.575	166	0.793	211	0.458	256	0.185	301	0.152	346	0.216		
32	0.128	77	0.248	122	0.584	167	0.793	212	0.447	257	0.182	302	0.155	347	0.214		
33	0.130	78	0.252	123	0.594	168	0.792	213	0.436	258	0.179	303	0.158	348	0.211		
34	0.133	79	0.257	124	0.603	169	0.791	214	0.425	259	0.176	304	0.161	349	0.208		
35	0.136	80	0.261	125	0.613	170	0.789	215	0.415	260	0.173	305	0.164	350	0.205		
36	0.139	81	0.266	126	0.622	171	0.787	216	0.404	261	0.170	306	0.167	351	0.202		
37	0.141	82	0.271	127	0.631	172	0.784	217	0.394	262	0.167	307	0.170	352	0.199		
38	0.144	83	0.276	128	0.641	173	0.781	218	0.384	263	0.164	308	0.173	353	0.195		
39	0.147	84	0.282	129	0.650	174	0.778	219	0.374	264	0.161	309	0.176	354	0.192		
40	0.150	85	0.287	130	0.658	175	0.773	220	0.364	265	0.158	310	0.179	355	0.189		
41	0.153	86	0.293	131	0.667	176	0.769	221	0.355	266	0.155	311	0.182	356	0.185		
42	0.156	87	0.298	132	0.675	177	0.764	222	0.346	267	0.152	312	0.185	357	0.182		
43	0.159	88	0.304	133	0.683	178	0.759	223	0.337	268	0.150	313	0.188	358	0.179		
44	0.162	89	0.311	134	0.691	179	0.753	224	0.329	269	0.147	314	0.191	359	0.175		

Date **11-May-05**  
 Call Letters **WUTV** Channel **14**  
 Location **Buffalo, NY**  
 Customer  
 Antenna Type **TLP-16E (C)**

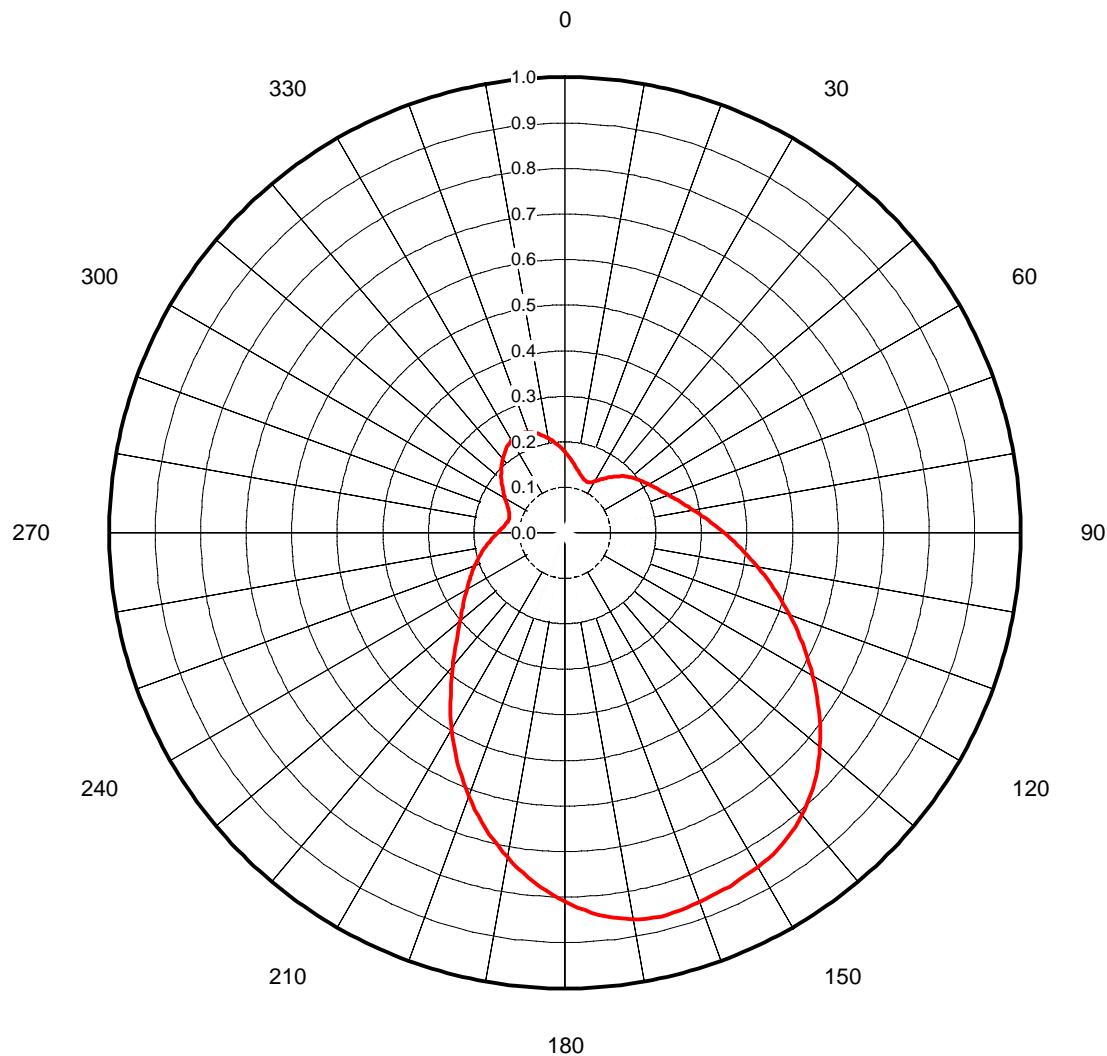
**AZIMUTH PATTERN:** **1.50° Depression Angle**

Gain  
 Calculated / Measured

**Calculated**

Frequency  
 Drawing #

**473.00 MHz**  
**TLP-E**



Mech. Tilt: **0.50°**  
 @  
 Azimuth: **120 deg**



Date  
Call Letters  
Location  
Customer  
Antenna Type

**11-May-05**  
**WUTV**  
**Buffalo, NY**  
**TLP-16E (C)**

Channel

**14**

**TABULATION OF AZIMUTH PATTERN: 1.50° Depression Angle**

Azimuth Pattern Drawing #: **TLP-E**

Angle	Field																
0	0.178	45	0.176	90	0.349	135	0.775	180	0.809	225	0.336	270	0.148	315	0.197		
1	0.174	46	0.179	91	0.357	136	0.782	181	0.802	226	0.328	271	0.145	316	0.200		
2	0.171	47	0.182	92	0.364	137	0.790	182	0.794	227	0.321	272	0.143	317	0.203		
3	0.168	48	0.185	93	0.372	138	0.797	183	0.786	228	0.313	273	0.141	318	0.206		
4	0.164	49	0.187	94	0.379	139	0.803	184	0.778	229	0.307	274	0.138	319	0.209		
5	0.161	50	0.190	95	0.387	140	0.809	185	0.769	230	0.300	275	0.136	320	0.212		
6	0.158	51	0.192	96	0.395	141	0.815	186	0.761	231	0.294	276	0.135	321	0.215		
7	0.154	52	0.194	97	0.404	142	0.820	187	0.752	232	0.288	277	0.133	322	0.217		
8	0.151	53	0.197	98	0.412	143	0.825	188	0.742	233	0.283	278	0.131	323	0.220		
9	0.148	54	0.199	99	0.421	144	0.829	189	0.733	234	0.277	279	0.130	324	0.222		
10	0.145	55	0.201	100	0.429	145	0.833	190	0.723	235	0.272	280	0.129	325	0.225		
11	0.142	56	0.203	101	0.438	146	0.837	191	0.713	236	0.267	281	0.128	326	0.227		
12	0.140	57	0.206	102	0.447	147	0.840	192	0.703	237	0.262	282	0.127	327	0.229		
13	0.137	58	0.208	103	0.457	148	0.842	193	0.693	238	0.258	283	0.127	328	0.231		
14	0.135	59	0.210	104	0.466	149	0.844	194	0.682	239	0.253	284	0.127	329	0.233		
15	0.132	60	0.213	105	0.475	150	0.846	195	0.671	240	0.249	285	0.127	330	0.234		
16	0.130	61	0.215	106	0.485	151	0.848	196	0.660	241	0.245	286	0.127	331	0.236		
17	0.128	62	0.218	107	0.494	152	0.850	197	0.649	242	0.240	287	0.127	332	0.237		
18	0.126	63	0.220	108	0.504	153	0.852	198	0.638	243	0.236	288	0.128	333	0.238		
19	0.125	64	0.223	109	0.514	154	0.854	199	0.627	244	0.232	289	0.129	334	0.239		
20	0.124	65	0.226	110	0.524	155	0.856	200	0.616	245	0.228	290	0.130	335	0.239		
21	0.123	66	0.229	111	0.534	156	0.857	201	0.604	246	0.225	291	0.131	336	0.239		
22	0.122	67	0.232	112	0.544	157	0.858	202	0.592	247	0.221	292	0.133	337	0.238		
23	0.122	68	0.235	113	0.554	158	0.860	203	0.581	248	0.217	293	0.135	338	0.238		
24	0.122	69	0.238	114	0.565	159	0.861	204	0.569	249	0.214	294	0.137	339	0.236		
25	0.123	70	0.242	115	0.575	160	0.863	205	0.557	250	0.210	295	0.139	340	0.235		
26	0.124	71	0.246	116	0.586	161	0.864	206	0.545	251	0.207	296	0.141	341	0.233		
27	0.125	72	0.249	117	0.596	162	0.865	207	0.533	252	0.203	297	0.143	342	0.231		
28	0.127	73	0.253	118	0.607	163	0.866	208	0.521	253	0.200	298	0.146	343	0.229		
29	0.129	74	0.258	119	0.617	164	0.867	209	0.509	254	0.197	299	0.148	344	0.227		
30	0.131	75	0.262	120	0.628	165	0.868	210	0.497	255	0.193	300	0.151	345	0.225		
31	0.133	76	0.267	121	0.639	166	0.868	211	0.485	256	0.190	301	0.154	346	0.222		
32	0.136	77	0.271	122	0.649	167	0.867	212	0.473	257	0.187	302	0.157	347	0.220		
33	0.138	78	0.276	123	0.660	168	0.865	213	0.461	258	0.184	303	0.160	348	0.217		
34	0.141	79	0.282	124	0.670	169	0.864	214	0.449	259	0.180	304	0.163	349	0.214		
35	0.144	80	0.287	125	0.681	170	0.861	215	0.437	260	0.177	305	0.166	350	0.211		
36	0.147	81	0.292	126	0.691	171	0.858	216	0.426	261	0.174	306	0.169	351	0.208		
37	0.151	82	0.298	127	0.701	172	0.854	217	0.415	262	0.171	307	0.172	352	0.205		
38	0.154	83	0.304	128	0.711	173	0.850	218	0.404	263	0.168	308	0.175	353	0.201		
39	0.157	84	0.310	129	0.721	174	0.846	219	0.393	264	0.165	309	0.178	354	0.198		
40	0.160	85	0.316	130	0.731	175	0.841	220	0.383	265	0.162	310	0.182	355	0.195		
41	0.164	86	0.322	131	0.740	176	0.835	221	0.373	266	0.159	311	0.185	356	0.192		
42	0.167	87	0.329	132	0.749	177	0.829	222	0.363	267	0.156	312	0.188	357	0.188		
43	0.170	88	0.335	133	0.758	178	0.823	223	0.354	268	0.153	313	0.191	358	0.185		
44	0.173	89	0.342	134	0.767	179	0.816	224	0.345	269	0.150	314	0.194	359	0.181		

Date **11-May-05**  
 Call Letters **WUTV** Channel **14**  
 Location **Buffalo, NY**  
 Customer  
 Antenna Type **TLP-16E (C)**

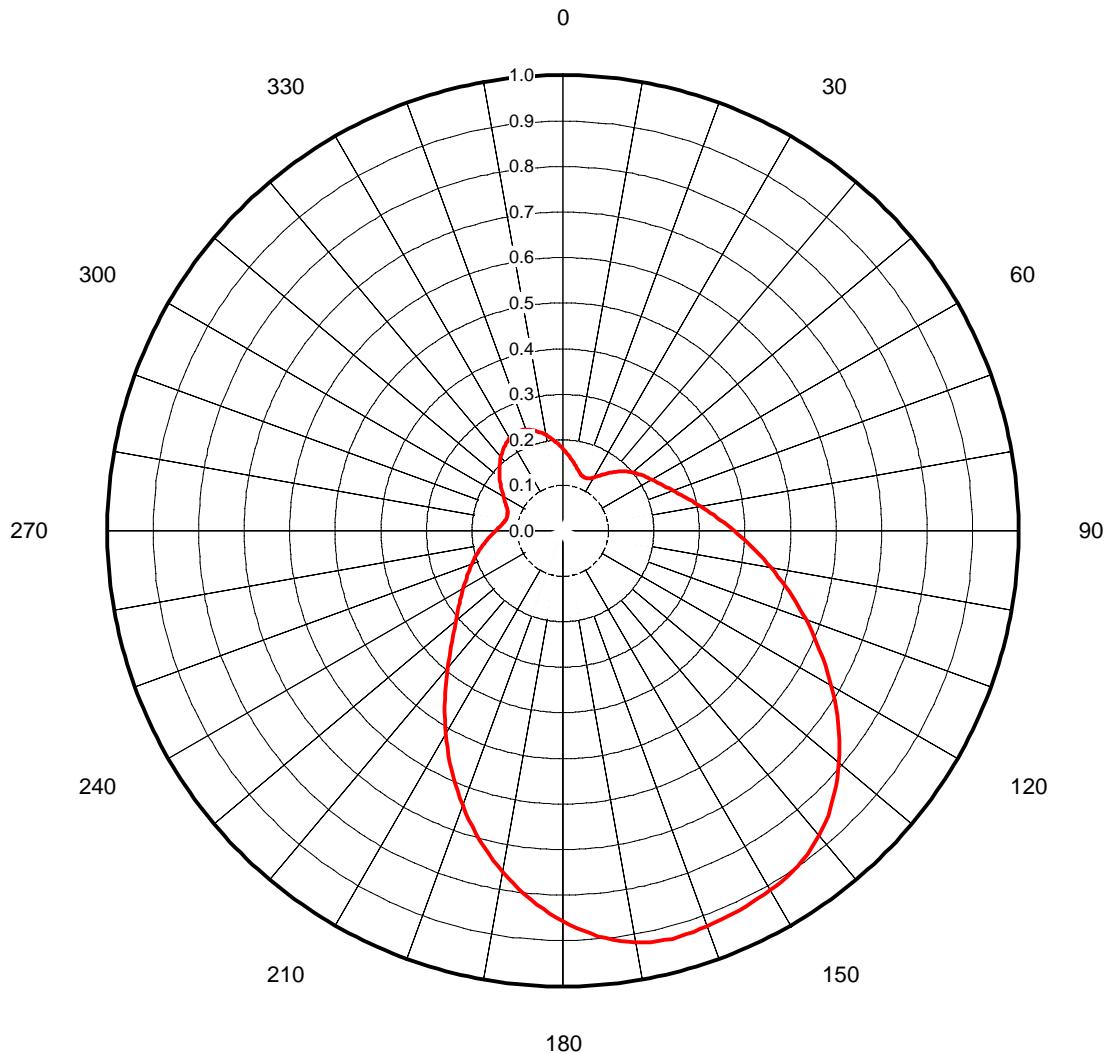
**AZIMUTH PATTERN:** **1.75° Depression Angle**

Gain  
 Calculated / Measured

**Calculated**

Frequency  
 Drawing #

**473.00 MHz**  
**TLP-E**



Mech. Tilt: **0.50°**  
 @  
 Azimuth: **120 deg**



Date  
Call Letters  
Location  
Customer  
Antenna Type

**11-May-05**  
**WUTV**  
**Buffalo, NY**  
**TLP-16E (C)**

Channel

**14**

## **TABULATION OF AZIMUTH PATTERN: 1.75° Depression Angle**

Azimuth Pattern Drawing #: **TLP-E**

Angle	Field																
0	0.180	45	0.185	90	0.376	135	0.838	180	0.857	225	0.345	270	0.148	315	0.197		
1	0.177	46	0.188	91	0.384	136	0.846	181	0.848	226	0.336	271	0.145	316	0.200		
2	0.174	47	0.191	92	0.392	137	0.854	182	0.840	227	0.328	272	0.143	317	0.203		
3	0.170	48	0.194	93	0.400	138	0.861	183	0.831	228	0.321	273	0.140	318	0.206		
4	0.167	49	0.197	94	0.409	139	0.868	184	0.821	229	0.313	274	0.138	319	0.209		
5	0.164	50	0.199	95	0.418	140	0.874	185	0.812	230	0.307	275	0.136	320	0.212		
6	0.161	51	0.202	96	0.426	141	0.880	186	0.802	231	0.300	276	0.134	321	0.214		
7	0.157	52	0.205	97	0.436	142	0.885	187	0.792	232	0.294	277	0.133	322	0.217		
8	0.154	53	0.207	98	0.445	143	0.890	188	0.781	233	0.288	278	0.131	323	0.220		
9	0.151	54	0.210	99	0.454	144	0.894	189	0.771	234	0.282	279	0.130	324	0.222		
10	0.148	55	0.212	100	0.464	145	0.898	190	0.760	235	0.277	280	0.129	325	0.224		
11	0.146	56	0.215	101	0.474	146	0.902	191	0.749	236	0.272	281	0.128	326	0.227		
12	0.143	57	0.217	102	0.483	147	0.905	192	0.738	237	0.267	282	0.127	327	0.229		
13	0.140	58	0.220	103	0.493	148	0.907	193	0.727	238	0.262	283	0.127	328	0.231		
14	0.138	59	0.222	104	0.504	149	0.909	194	0.715	239	0.257	284	0.126	329	0.233		
15	0.135	60	0.225	105	0.514	150	0.911	195	0.703	240	0.252	285	0.126	330	0.234		
16	0.133	61	0.228	106	0.524	151	0.912	196	0.691	241	0.248	286	0.126	331	0.236		
17	0.131	62	0.231	107	0.535	152	0.914	197	0.679	242	0.244	287	0.127	332	0.237		
18	0.130	63	0.234	108	0.546	153	0.915	198	0.667	243	0.239	288	0.127	333	0.238		
19	0.128	64	0.237	109	0.556	154	0.917	199	0.654	244	0.235	289	0.128	334	0.239		
20	0.127	65	0.240	110	0.567	155	0.919	200	0.642	245	0.231	290	0.129	335	0.239		
21	0.126	66	0.243	111	0.578	156	0.920	201	0.629	246	0.227	291	0.131	336	0.239		
22	0.126	67	0.246	112	0.589	157	0.920	202	0.617	247	0.223	292	0.132	337	0.239		
23	0.126	68	0.250	113	0.600	158	0.921	203	0.604	248	0.220	293	0.134	338	0.238		
24	0.126	69	0.254	114	0.612	159	0.922	204	0.591	249	0.216	294	0.136	339	0.237		
25	0.127	70	0.258	115	0.623	160	0.923	205	0.578	250	0.212	295	0.138	340	0.236		
26	0.128	71	0.262	116	0.634	161	0.925	206	0.566	251	0.209	296	0.140	341	0.234		
27	0.129	72	0.266	117	0.646	162	0.925	207	0.553	252	0.205	297	0.143	342	0.233		
28	0.131	73	0.270	118	0.657	163	0.926	208	0.540	253	0.202	298	0.145	343	0.231		
29	0.133	74	0.275	119	0.669	164	0.927	209	0.527	254	0.198	299	0.148	344	0.229		
30	0.135	75	0.280	120	0.680	165	0.927	210	0.514	255	0.195	300	0.151	345	0.226		
31	0.138	76	0.285	121	0.692	166	0.926	211	0.502	256	0.191	301	0.153	346	0.224		
32	0.141	77	0.290	122	0.703	167	0.925	212	0.489	257	0.188	302	0.156	347	0.221		
33	0.143	78	0.296	123	0.715	168	0.923	213	0.476	258	0.185	303	0.159	348	0.219		
34	0.147	79	0.301	124	0.726	169	0.920	214	0.464	259	0.181	304	0.162	349	0.216		
35	0.150	80	0.307	125	0.737	170	0.917	215	0.451	260	0.178	305	0.165	350	0.213		
36	0.153	81	0.313	126	0.748	171	0.913	216	0.439	261	0.175	306	0.168	351	0.210		
37	0.157	82	0.319	127	0.759	172	0.909	217	0.427	262	0.171	307	0.171	352	0.207		
38	0.160	83	0.326	128	0.770	173	0.904	218	0.416	263	0.168	308	0.175	353	0.204		
39	0.164	84	0.332	129	0.781	174	0.899	219	0.405	264	0.165	309	0.178	354	0.200		
40	0.167	85	0.339	130	0.791	175	0.893	220	0.394	265	0.162	310	0.181	355	0.197		
41	0.171	86	0.346	131	0.801	176	0.886	221	0.383	266	0.159	311	0.184	356	0.194		
42	0.174	87	0.353	132	0.811	177	0.880	222	0.373	267	0.156	312	0.187	357	0.191		
43	0.178	88	0.361	133	0.820	178	0.872	223	0.363	268	0.153	313	0.190	358	0.187		
44	0.181	89	0.368	134	0.829	179	0.865	224	0.354	269	0.150	314	0.194	359	0.184		

Date **11-May-05**  
 Call Letters **WUTV** Channel **14**  
 Location **Buffalo, NY**  
 Customer  
 Antenna Type **TLP-16E (C)**

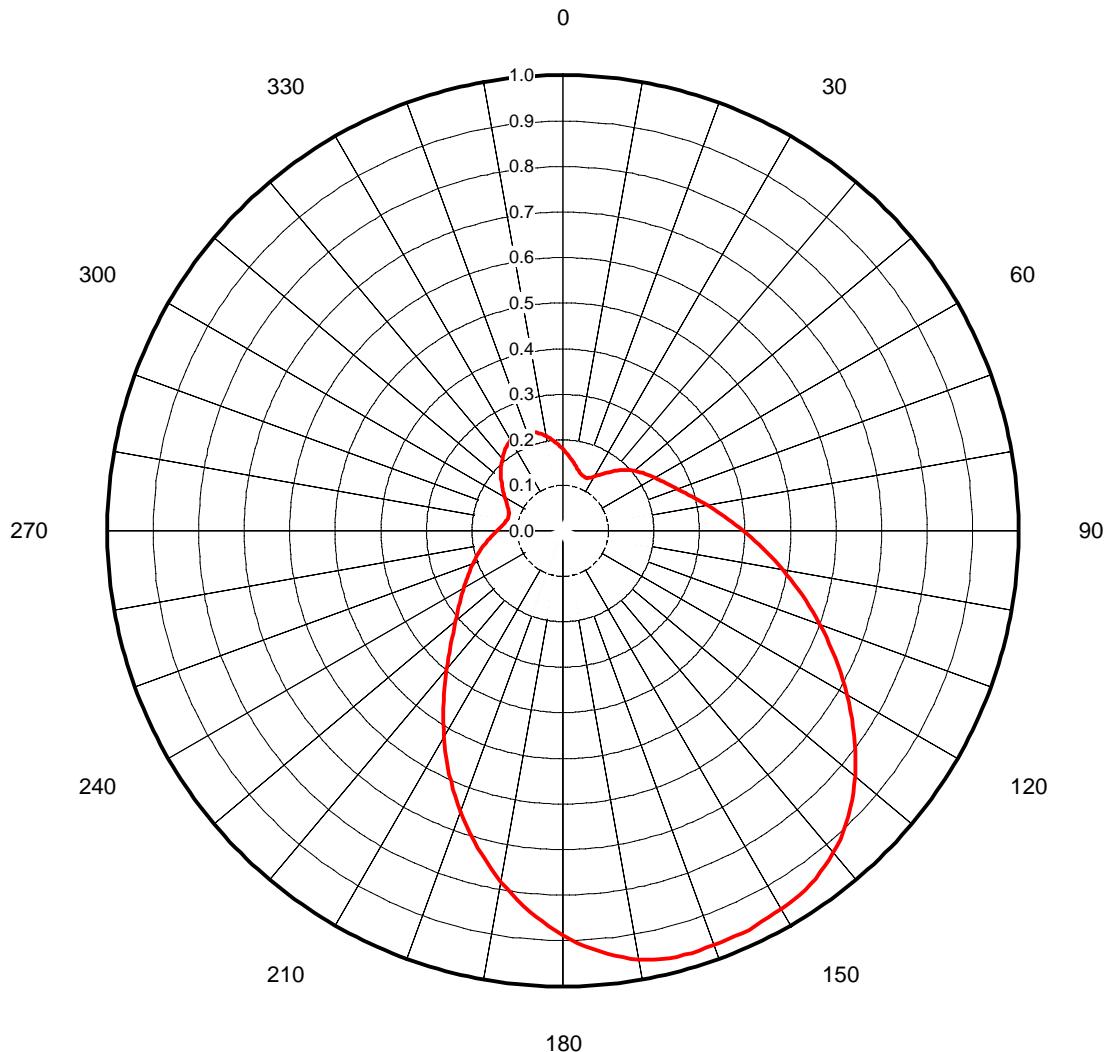
**AZIMUTH PATTERN:** **2.00° Depression Angle**

Gain  
 Calculated / Measured

**Calculated**

Frequency  
 Drawing #

**473.00 MHz**  
**TLP-E**



Mech. Tilt: **0.50°**  
 @  
 Azimuth: **120 deg**



Date  
Call Letters  
Location  
Customer  
Antenna Type

**11-May-05**  
**WUTV**  
**Buffalo, NY**  
**TLP-16E (C)**

Channel

**14**

**TABULATION OF AZIMUTH PATTERN: 2.00° Depression Angle**

Azimuth Pattern Drawing #: **TLP-E**

Angle	Field																
0	0.180	45	0.189	90	0.396	135	0.886	180	0.887	225	0.346	270	0.145	315	0.192		
1	0.176	46	0.193	91	0.404	136	0.894	181	0.878	226	0.338	271	0.142	316	0.195		
2	0.173	47	0.196	92	0.413	137	0.902	182	0.868	227	0.329	272	0.140	317	0.198		
3	0.170	48	0.199	93	0.422	138	0.910	183	0.858	228	0.322	273	0.138	318	0.201		
4	0.167	49	0.202	94	0.431	139	0.916	184	0.848	229	0.314	274	0.136	319	0.204		
5	0.163	50	0.205	95	0.440	140	0.923	185	0.838	230	0.307	275	0.134	320	0.207		
6	0.160	51	0.208	96	0.450	141	0.929	186	0.827	231	0.300	276	0.132	321	0.210		
7	0.157	52	0.211	97	0.459	142	0.934	187	0.816	232	0.294	277	0.130	322	0.212		
8	0.154	53	0.213	98	0.469	143	0.939	188	0.805	233	0.288	278	0.128	323	0.215		
9	0.151	54	0.216	99	0.479	144	0.943	189	0.794	234	0.282	279	0.127	324	0.217		
10	0.149	55	0.219	100	0.490	145	0.947	190	0.782	235	0.277	280	0.126	325	0.220		
11	0.146	56	0.222	101	0.500	146	0.950	191	0.770	236	0.271	281	0.125	326	0.222		
12	0.143	57	0.225	102	0.511	147	0.953	192	0.758	237	0.266	282	0.124	327	0.224		
13	0.141	58	0.227	103	0.521	148	0.955	193	0.746	238	0.261	283	0.124	328	0.226		
14	0.138	59	0.230	104	0.532	149	0.957	194	0.734	239	0.256	284	0.123	329	0.228		
15	0.136	60	0.233	105	0.543	150	0.958	195	0.721	240	0.251	285	0.123	330	0.230		
16	0.134	61	0.236	106	0.554	151	0.960	196	0.708	241	0.247	286	0.123	331	0.231		
17	0.132	62	0.239	107	0.566	152	0.961	197	0.695	242	0.242	287	0.124	332	0.233		
18	0.131	63	0.242	108	0.577	153	0.962	198	0.683	243	0.238	288	0.124	333	0.234		
19	0.129	64	0.246	109	0.589	154	0.963	199	0.669	244	0.234	289	0.125	334	0.235		
20	0.128	65	0.249	110	0.600	155	0.966	200	0.656	245	0.229	290	0.126	335	0.235		
21	0.128	66	0.252	111	0.612	156	0.966	201	0.643	246	0.225	291	0.128	336	0.235		
22	0.127	67	0.256	112	0.624	157	0.966	202	0.630	247	0.221	292	0.129	337	0.235		
23	0.127	68	0.260	113	0.636	158	0.967	203	0.616	248	0.217	293	0.131	338	0.234		
24	0.127	69	0.264	114	0.647	159	0.967	204	0.603	249	0.214	294	0.133	339	0.233		
25	0.128	70	0.268	115	0.659	160	0.968	205	0.589	250	0.210	295	0.135	340	0.232		
26	0.129	71	0.273	116	0.672	161	0.968	206	0.576	251	0.206	296	0.137	341	0.231		
27	0.131	72	0.277	117	0.684	162	0.968	207	0.562	252	0.203	297	0.139	342	0.229		
28	0.133	73	0.282	118	0.696	163	0.969	208	0.549	253	0.199	298	0.142	343	0.227		
29	0.135	74	0.287	119	0.708	164	0.968	209	0.535	254	0.196	299	0.144	344	0.225		
30	0.137	75	0.292	120	0.720	165	0.968	210	0.522	255	0.192	300	0.147	345	0.223		
31	0.140	76	0.298	121	0.732	166	0.966	211	0.508	256	0.189	301	0.150	346	0.221		
32	0.143	77	0.303	122	0.745	167	0.964	212	0.495	257	0.185	302	0.152	347	0.219		
33	0.146	78	0.309	123	0.757	168	0.962	213	0.482	258	0.182	303	0.155	348	0.216		
34	0.149	79	0.315	124	0.769	169	0.959	214	0.469	259	0.179	304	0.158	349	0.213		
35	0.153	80	0.322	125	0.781	170	0.955	215	0.456	260	0.175	305	0.161	350	0.211		
36	0.156	81	0.328	126	0.792	171	0.950	216	0.444	261	0.172	306	0.164	351	0.208		
37	0.160	82	0.335	127	0.804	172	0.945	217	0.432	262	0.169	307	0.167	352	0.205		
38	0.163	83	0.342	128	0.815	173	0.940	218	0.420	263	0.165	308	0.170	353	0.202		
39	0.167	84	0.349	129	0.826	174	0.934	219	0.408	264	0.162	309	0.174	354	0.199		
40	0.171	85	0.356	130	0.837	175	0.927	220	0.397	265	0.159	310	0.177	355	0.196		
41	0.175	86	0.364	131	0.847	176	0.920	221	0.386	266	0.156	311	0.180	356	0.193		
42	0.179	87	0.371	132	0.858	177	0.912	222	0.375	267	0.153	312	0.183	357	0.189		
43	0.182	88	0.379	133	0.867	178	0.904	223	0.365	268	0.150	313	0.186	358	0.186		
44	0.186	89	0.387	134	0.877	179	0.896	224	0.355	269	0.148	314	0.189	359	0.183		

Date **11-May-05**  
 Call Letters **WUTV** Channel **14**  
 Location **Buffalo, NY**  
 Customer  
 Antenna Type **TLP-16E (C)**

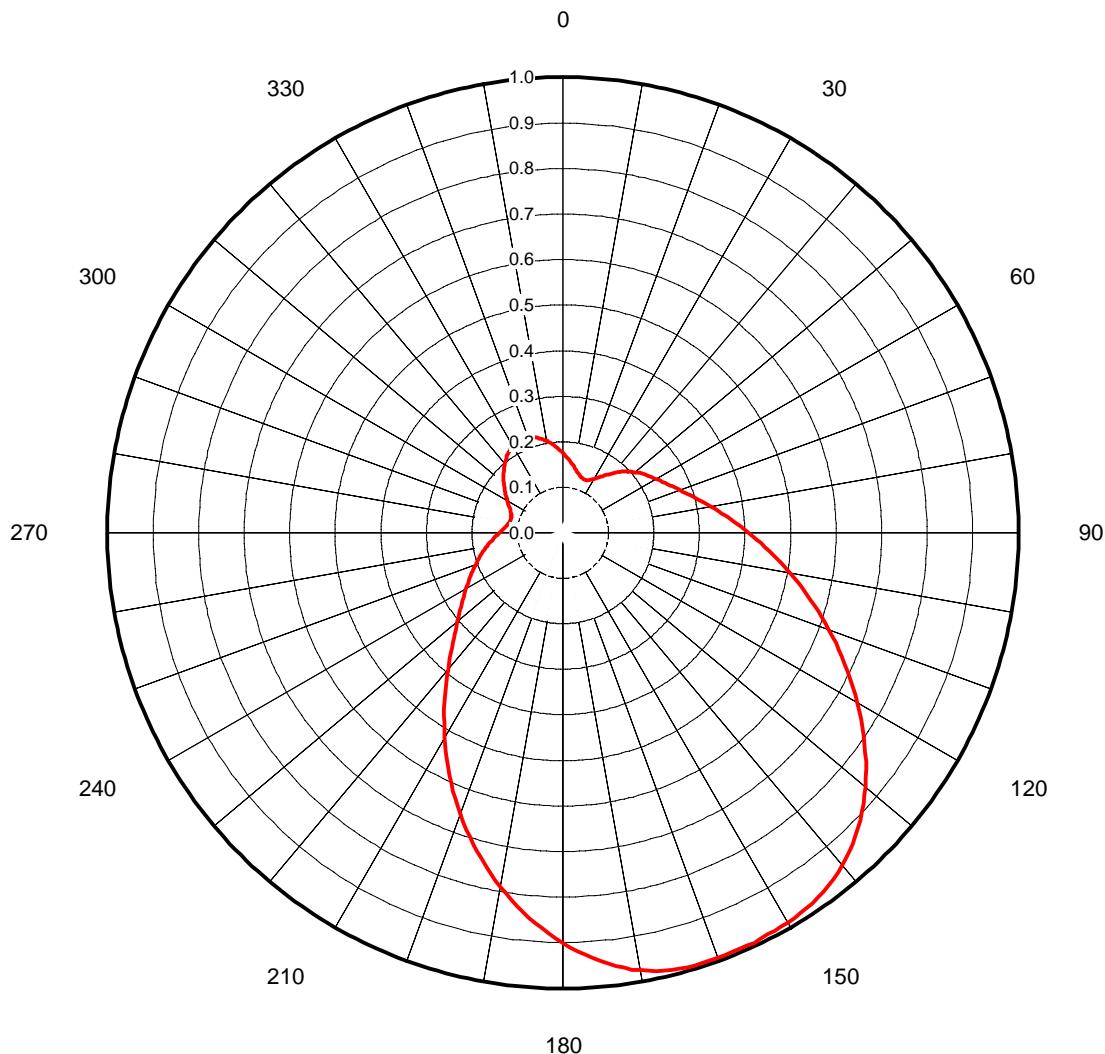
**AZIMUTH PATTERN:** **2.25° Depression Angle**

Gain  
 Calculated / Measured

**Calculated**

Frequency  
 Drawing #

**473.00 MHz**  
**TLP-E**



Mech. Tilt: **0.50°**  
 @  
 Azimuth: **120 deg**



Date  
Call Letters  
Location  
Customer  
Antenna Type

**11-May-05**  
**WUTV**  
**Buffalo, NY**  
**TLP-16E (C)**

Channel

**14**

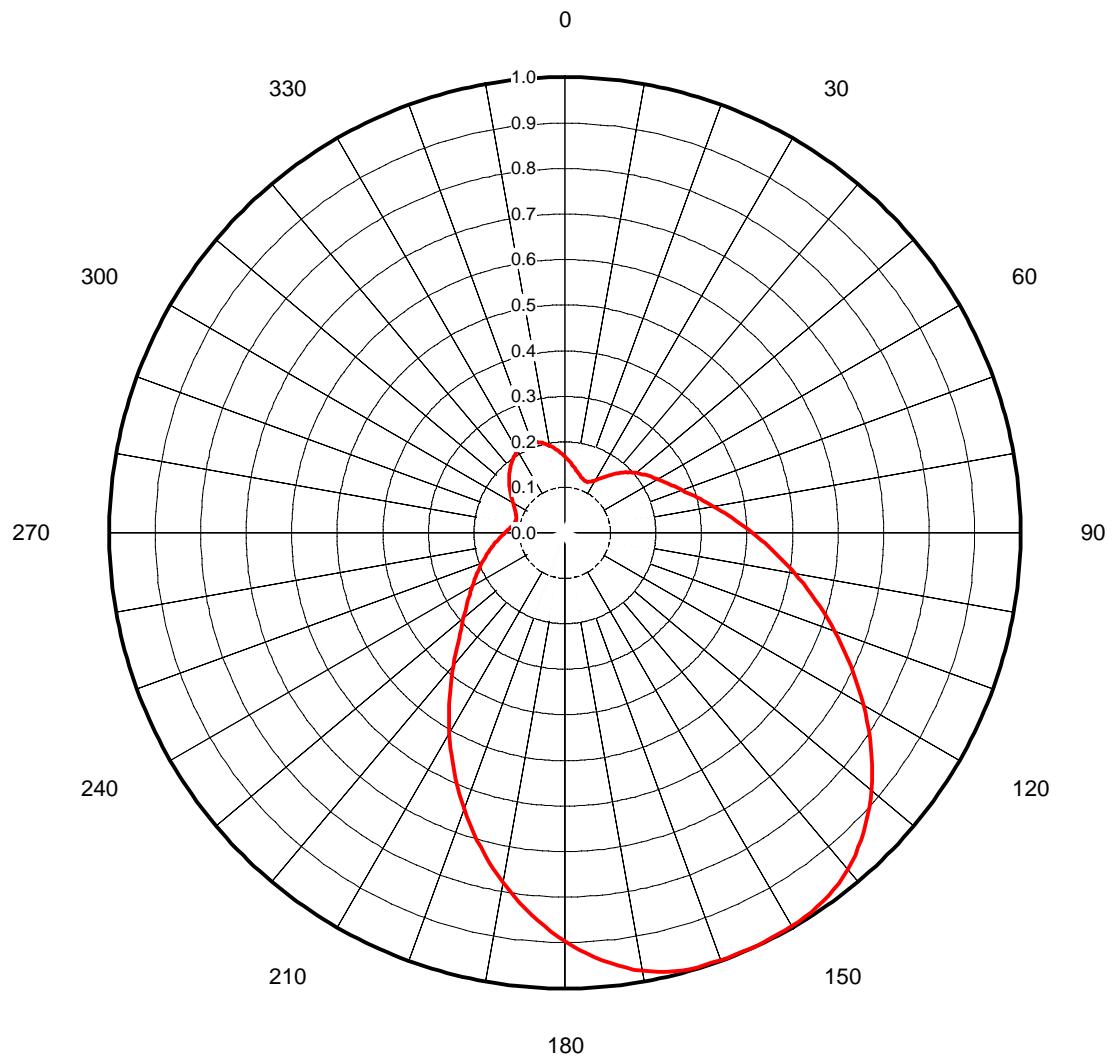
**TABULATION OF AZIMUTH PATTERN: 2.25° Depression Angle**

Azimuth Pattern Drawing #: **TLP-E**

Angle	Field																
0	0.175	45	0.190	90	0.407	135	0.916	180	0.900	225	0.341	270	0.139	315	0.184		
1	0.172	46	0.194	91	0.416	136	0.924	181	0.890	226	0.332	271	0.137	316	0.187		
2	0.169	47	0.197	92	0.425	137	0.932	182	0.880	227	0.324	272	0.134	317	0.190		
3	0.166	48	0.201	93	0.435	138	0.940	183	0.869	228	0.316	273	0.132	318	0.193		
4	0.163	49	0.204	94	0.444	139	0.947	184	0.859	229	0.308	274	0.130	319	0.196		
5	0.160	50	0.207	95	0.454	140	0.953	185	0.848	230	0.301	275	0.128	320	0.198		
6	0.157	51	0.210	96	0.464	141	0.959	186	0.836	231	0.295	276	0.126	321	0.201		
7	0.154	52	0.213	97	0.474	142	0.964	187	0.825	232	0.288	277	0.125	322	0.204		
8	0.151	53	0.216	98	0.485	143	0.969	188	0.813	233	0.282	278	0.123	323	0.206		
9	0.148	54	0.219	99	0.495	144	0.973	189	0.801	234	0.276	279	0.122	324	0.209		
10	0.146	55	0.222	100	0.506	145	0.977	190	0.789	235	0.271	280	0.121	325	0.211		
11	0.143	56	0.224	101	0.517	146	0.980	191	0.776	236	0.265	281	0.120	326	0.213		
12	0.141	57	0.227	102	0.528	147	0.982	192	0.764	237	0.260	282	0.119	327	0.215		
13	0.138	58	0.230	103	0.539	148	0.984	193	0.751	238	0.255	283	0.119	328	0.217		
14	0.136	59	0.233	104	0.550	149	0.986	194	0.738	239	0.250	284	0.118	329	0.219		
15	0.134	60	0.236	105	0.562	150	0.987	195	0.725	240	0.245	285	0.118	330	0.221		
16	0.132	61	0.240	106	0.573	151	0.988	196	0.712	241	0.241	286	0.118	331	0.223		
17	0.130	62	0.243	107	0.585	152	0.989	197	0.698	242	0.236	287	0.119	332	0.224		
18	0.129	63	0.246	108	0.597	153	0.989	198	0.685	243	0.232	288	0.119	333	0.225		
19	0.128	64	0.250	109	0.609	154	0.990	199	0.671	244	0.228	289	0.120	334	0.226		
20	0.127	65	0.253	110	0.621	155	0.992	200	0.657	245	0.223	290	0.121	335	0.227		
21	0.126	66	0.257	111	0.633	156	0.992	201	0.644	246	0.219	291	0.122	336	0.227		
22	0.126	67	0.261	112	0.646	157	0.992	202	0.630	247	0.215	292	0.124	337	0.227		
23	0.126	68	0.265	113	0.658	158	0.992	203	0.616	248	0.211	293	0.125	338	0.226		
24	0.126	69	0.269	114	0.670	159	0.992	204	0.602	249	0.208	294	0.127	339	0.225		
25	0.127	70	0.274	115	0.683	160	0.993	205	0.588	250	0.204	295	0.129	340	0.224		
26	0.128	71	0.278	116	0.695	161	0.993	206	0.575	251	0.200	296	0.131	341	0.223		
27	0.130	72	0.283	117	0.708	162	0.993	207	0.561	252	0.197	297	0.133	342	0.222		
28	0.132	73	0.288	118	0.721	163	0.992	208	0.547	253	0.193	298	0.136	343	0.220		
29	0.134	74	0.294	119	0.733	164	0.992	209	0.533	254	0.190	299	0.138	344	0.218		
30	0.137	75	0.299	120	0.746	165	0.991	210	0.520	255	0.186	300	0.141	345	0.216		
31	0.139	76	0.305	121	0.759	166	0.989	211	0.506	256	0.183	301	0.143	346	0.214		
32	0.142	77	0.311	122	0.771	167	0.986	212	0.492	257	0.179	302	0.146	347	0.212		
33	0.146	78	0.317	123	0.784	168	0.983	213	0.479	258	0.176	303	0.149	348	0.209		
34	0.149	79	0.323	124	0.796	169	0.979	214	0.466	259	0.172	304	0.151	349	0.207		
35	0.152	80	0.330	125	0.808	170	0.975	215	0.453	260	0.169	305	0.154	350	0.204		
36	0.156	81	0.337	126	0.820	171	0.970	216	0.440	261	0.166	306	0.157	351	0.202		
37	0.160	82	0.344	127	0.832	172	0.964	217	0.427	262	0.163	307	0.160	352	0.199		
38	0.164	83	0.351	128	0.844	173	0.958	218	0.415	263	0.159	308	0.163	353	0.196		
39	0.167	84	0.358	129	0.855	174	0.951	219	0.403	264	0.156	309	0.166	354	0.193		
40	0.171	85	0.366	130	0.866	175	0.944	220	0.392	265	0.153	310	0.169	355	0.190		
41	0.175	86	0.374	131	0.877	176	0.936	221	0.381	266	0.150	311	0.172	356	0.187		
42	0.179	87	0.382	132	0.887	177	0.927	222	0.370	267	0.147	312	0.175	357	0.184		
43	0.183	88	0.390	133	0.897	178	0.919	223	0.360	268	0.145	313	0.178	358	0.181		
44	0.187	89	0.399	134	0.907	179	0.909	224	0.350	269	0.142	314	0.181	359	0.178		

Date **11-May-05**  
 Call Letters **WUTV** Channel **14**  
 Location **Buffalo, NY**  
 Customer  
 Antenna Type **TLP-16E (C)**

AZIMUTH PATTERN: **2.50° Depression** Ang  
 Gain **473.00 MHz**  
 Calculated / Measured **Calculated** Frequency Drawing # **TLP-E**



Mech. Tilt: **0.50°**  
 @  
 Azimuth: **120 deg**



Date  
Call Letters  
Location  
Customer  
Antenna Type

**11-May-05**  
**WUTV**  
**Buffalo, NY**  
**TLP-16E (C)**

Channel

**14**

## **TABULATION OF AZIMUTH PATTERN: 2.50° Depression Angle**

Azimuth Pattern Drawing #: **TLP-E**

Angle	Field																
0	0.168	45	0.188	90	0.411	135	0.928	180	0.896	225	0.329	270	0.131	315	0.173		
1	0.165	46	0.191	91	0.420	136	0.936	181	0.886	226	0.321	271	0.129	316	0.176		
2	0.162	47	0.195	92	0.430	137	0.944	182	0.875	227	0.312	272	0.127	317	0.178		
3	0.159	48	0.198	93	0.439	138	0.952	183	0.864	228	0.305	273	0.124	318	0.181		
4	0.156	49	0.201	94	0.449	139	0.959	184	0.852	229	0.297	274	0.122	319	0.184		
5	0.153	50	0.204	95	0.459	140	0.965	185	0.841	230	0.290	275	0.121	320	0.186		
6	0.151	51	0.208	96	0.469	141	0.971	186	0.829	231	0.283	276	0.119	321	0.189		
7	0.148	52	0.211	97	0.480	142	0.976	187	0.817	232	0.277	277	0.117	322	0.192		
8	0.145	53	0.214	98	0.490	143	0.980	188	0.805	233	0.271	278	0.116	323	0.194		
9	0.143	54	0.217	99	0.501	144	0.984	189	0.792	234	0.265	279	0.115	324	0.196		
10	0.140	55	0.220	100	0.512	145	0.988	190	0.780	235	0.260	280	0.113	325	0.199		
11	0.138	56	0.223	101	0.523	146	0.991	191	0.767	236	0.254	281	0.113	326	0.201		
12	0.136	57	0.226	102	0.534	147	0.993	192	0.754	237	0.249	282	0.112	327	0.203		
13	0.133	58	0.229	103	0.546	148	0.995	193	0.741	238	0.244	283	0.111	328	0.205		
14	0.131	59	0.232	104	0.557	149	0.996	194	0.728	239	0.239	284	0.111	329	0.207		
15	0.129	60	0.236	105	0.569	150	0.996	195	0.714	240	0.235	285	0.111	330	0.208		
16	0.128	61	0.239	106	0.581	151	0.997	196	0.701	241	0.230	286	0.111	331	0.210		
17	0.126	62	0.242	107	0.593	152	0.997	197	0.687	242	0.226	287	0.111	332	0.211		
18	0.125	63	0.246	108	0.605	153	0.998	198	0.673	243	0.221	288	0.112	333	0.213		
19	0.124	64	0.249	109	0.617	154	0.998	199	0.660	244	0.217	289	0.113	334	0.213		
20	0.123	65	0.253	110	0.630	155	1.000	200	0.646	245	0.213	290	0.114	335	0.214		
21	0.122	66	0.257	111	0.642	156	0.999	201	0.632	246	0.209	291	0.115	336	0.214		
22	0.122	67	0.261	112	0.655	157	0.999	202	0.618	247	0.205	292	0.116	337	0.214		
23	0.122	68	0.265	113	0.667	158	0.998	203	0.604	248	0.201	293	0.118	338	0.214		
24	0.123	69	0.269	114	0.680	159	0.998	204	0.590	249	0.197	294	0.119	339	0.213		
25	0.124	70	0.274	115	0.692	160	0.998	205	0.576	250	0.194	295	0.121	340	0.212		
26	0.125	71	0.279	116	0.705	161	0.998	206	0.562	251	0.190	296	0.123	341	0.211		
27	0.127	72	0.284	117	0.718	162	0.997	207	0.548	252	0.187	297	0.125	342	0.210		
28	0.129	73	0.289	118	0.731	163	0.997	208	0.534	253	0.183	298	0.127	343	0.208		
29	0.131	74	0.295	119	0.744	164	0.995	209	0.521	254	0.180	299	0.129	344	0.207		
30	0.133	75	0.300	120	0.756	165	0.994	210	0.507	255	0.176	300	0.132	345	0.205		
31	0.136	76	0.306	121	0.769	166	0.992	211	0.493	256	0.173	301	0.134	346	0.203		
32	0.139	77	0.312	122	0.782	167	0.989	212	0.480	257	0.170	302	0.137	347	0.201		
33	0.142	78	0.319	123	0.795	168	0.985	213	0.466	258	0.167	303	0.139	348	0.199		
34	0.146	79	0.325	124	0.807	169	0.981	214	0.453	259	0.163	304	0.142	349	0.197		
35	0.149	80	0.332	125	0.820	170	0.976	215	0.440	260	0.160	305	0.145	350	0.194		
36	0.153	81	0.339	126	0.832	171	0.970	216	0.428	261	0.157	306	0.147	351	0.192		
37	0.157	82	0.346	127	0.844	172	0.964	217	0.415	262	0.154	307	0.150	352	0.189		
38	0.160	83	0.353	128	0.856	173	0.957	218	0.403	263	0.151	308	0.153	353	0.187		
39	0.164	84	0.361	129	0.867	174	0.950	219	0.391	264	0.148	309	0.156	354	0.184		
40	0.168	85	0.369	130	0.878	175	0.942	220	0.380	265	0.145	310	0.159	355	0.182		
41	0.172	86	0.377	131	0.889	176	0.934	221	0.369	266	0.142	311	0.162	356	0.179		
42	0.176	87	0.385	132	0.899	177	0.925	222	0.358	267	0.139	312	0.164	357	0.176		
43	0.180	88	0.394	133	0.909	178	0.916	223	0.348	268	0.136	313	0.167	358	0.173		
44	0.184	89	0.402	134	0.919	179	0.906	224	0.339	269	0.134	314	0.170	359	0.171		

Date **11-May-05**  
 Call Letters **WUTV** Channel **14**  
 Location **Buffalo, NY**  
 Customer  
 Antenna Type **TLP-16E (C)**

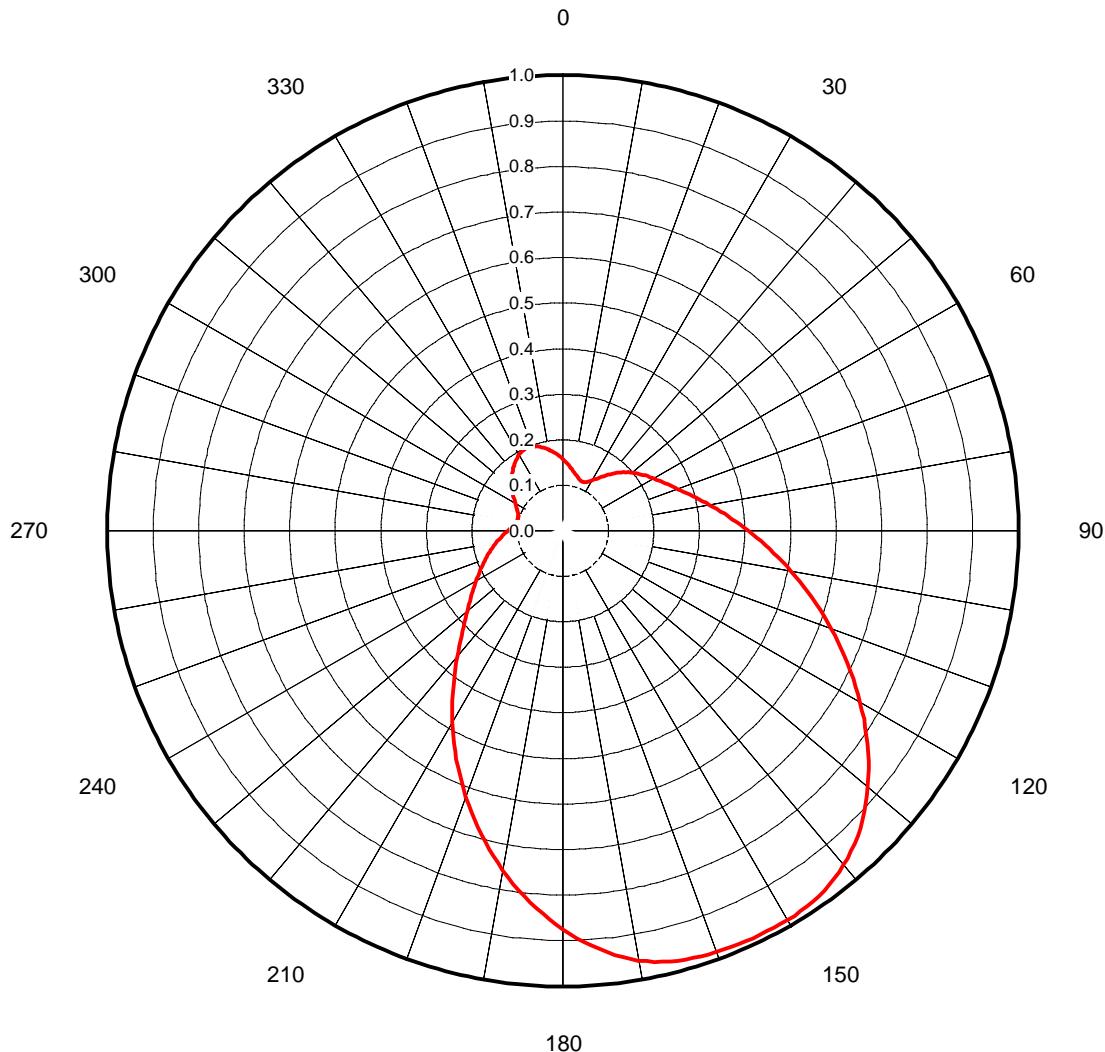
**AZIMUTH PATTERN:** **2.75° Depression Angle**

Gain  
 Calculated / Measured

**Calculated**

Frequency  
 Drawing #

**473.00 MHz**  
**TLP-E**



Mech. Tilt: **0.50°**  
 @  
 Azimuth: **120 deg**



Date  
Call Letters  
Location  
Customer  
Antenna Type

**11-May-05**  
**WUTV**  
**Buffalo, NY**  
**TLP-16E (C)**

Channel

**14**

## **TABULATION OF AZIMUTH PATTERN: 2.75° Depression Angle**

Azimuth Pattern Drawing #: **TLP-E**

Angle	Field																
0	0.157	45	0.181	90	0.407	135	0.922	180	0.875	225	0.312	270	0.121	315	0.159		
1	0.155	46	0.185	91	0.416	136	0.931	181	0.864	226	0.304	271	0.119	316	0.161		
2	0.152	47	0.188	92	0.426	137	0.938	182	0.853	227	0.296	272	0.117	317	0.164		
3	0.149	48	0.192	93	0.435	138	0.946	183	0.842	228	0.288	273	0.115	318	0.167		
4	0.147	49	0.195	94	0.445	139	0.952	184	0.830	229	0.281	274	0.113	319	0.169		
5	0.144	50	0.198	95	0.455	140	0.958	185	0.819	230	0.274	275	0.111	320	0.172		
6	0.142	51	0.202	96	0.465	141	0.963	186	0.807	231	0.267	276	0.109	321	0.174		
7	0.139	52	0.205	97	0.476	142	0.968	187	0.794	232	0.261	277	0.108	322	0.176		
8	0.137	53	0.208	98	0.486	143	0.972	188	0.782	233	0.255	278	0.107	323	0.179		
9	0.135	54	0.211	99	0.497	144	0.976	189	0.769	234	0.250	279	0.105	324	0.181		
10	0.132	55	0.214	100	0.508	145	0.979	190	0.757	235	0.244	280	0.104	325	0.183		
11	0.130	56	0.217	101	0.520	146	0.982	191	0.744	236	0.239	281	0.104	326	0.185		
12	0.128	57	0.220	102	0.531	147	0.983	192	0.731	237	0.234	282	0.103	327	0.187		
13	0.126	58	0.223	103	0.542	148	0.985	193	0.717	238	0.229	283	0.102	328	0.189		
14	0.124	59	0.227	104	0.554	149	0.986	194	0.704	239	0.225	284	0.102	329	0.191		
15	0.123	60	0.230	105	0.566	150	0.986	195	0.690	240	0.220	285	0.102	330	0.192		
16	0.121	61	0.233	106	0.578	151	0.986	196	0.677	241	0.216	286	0.102	331	0.194		
17	0.120	62	0.237	107	0.590	152	0.986	197	0.663	242	0.211	287	0.102	332	0.195		
18	0.118	63	0.240	108	0.602	153	0.986	198	0.649	243	0.207	288	0.103	333	0.196		
19	0.117	64	0.244	109	0.614	154	0.986	199	0.636	244	0.203	289	0.103	334	0.197		
20	0.117	65	0.248	110	0.627	155	0.988	200	0.622	245	0.199	290	0.104	335	0.198		
21	0.116	66	0.251	111	0.639	156	0.987	201	0.608	246	0.195	291	0.105	336	0.198		
22	0.116	67	0.256	112	0.652	157	0.986	202	0.594	247	0.191	292	0.106	337	0.198		
23	0.116	68	0.260	113	0.664	158	0.985	203	0.581	248	0.188	293	0.108	338	0.198		
24	0.117	69	0.264	114	0.677	159	0.984	204	0.567	249	0.184	294	0.109	339	0.198		
25	0.118	70	0.269	115	0.689	160	0.984	205	0.553	250	0.181	295	0.111	340	0.197		
26	0.119	71	0.274	116	0.702	161	0.983	206	0.539	251	0.177	296	0.113	341	0.196		
27	0.121	72	0.279	117	0.715	162	0.982	207	0.526	252	0.174	297	0.115	342	0.195		
28	0.123	73	0.284	118	0.728	163	0.981	208	0.512	253	0.170	298	0.117	343	0.193		
29	0.125	74	0.289	119	0.741	164	0.979	209	0.498	254	0.167	299	0.119	344	0.192		
30	0.128	75	0.295	120	0.753	165	0.977	210	0.485	255	0.164	300	0.121	345	0.190		
31	0.130	76	0.301	121	0.766	166	0.974	211	0.472	256	0.161	301	0.123	346	0.189		
32	0.133	77	0.307	122	0.779	167	0.971	212	0.458	257	0.158	302	0.125	347	0.187		
33	0.136	78	0.314	123	0.791	168	0.967	213	0.445	258	0.155	303	0.128	348	0.185		
34	0.140	79	0.320	124	0.804	169	0.962	214	0.432	259	0.151	304	0.130	349	0.183		
35	0.143	80	0.327	125	0.816	170	0.957	215	0.420	260	0.148	305	0.133	350	0.181		
36	0.147	81	0.334	126	0.828	171	0.951	216	0.407	261	0.145	306	0.135	351	0.179		
37	0.151	82	0.341	127	0.840	172	0.945	217	0.395	262	0.142	307	0.138	352	0.177		
38	0.154	83	0.349	128	0.852	173	0.938	218	0.383	263	0.140	308	0.140	353	0.174		
39	0.158	84	0.357	129	0.863	174	0.930	219	0.372	264	0.137	309	0.143	354	0.172		
40	0.162	85	0.364	130	0.874	175	0.922	220	0.361	265	0.134	310	0.146	355	0.170		
41	0.166	86	0.372	131	0.884	176	0.913	221	0.350	266	0.131	311	0.148	356	0.167		
42	0.170	87	0.381	132	0.895	177	0.904	222	0.340	267	0.129	312	0.151	357	0.165		
43	0.174	88	0.389	133	0.904	178	0.895	223	0.330	268	0.126	313	0.154	358	0.162		
44	0.178	89	0.398	134	0.914	179	0.885	224	0.321	269	0.124	314	0.156	359	0.160		



Proposal Number **DCA-**  
Date **11-May-05**  
Call Letters **WUTV-DT**  
Location **Buffalo, NY**  
Customer  
Antenna Type **TLP-16E ( C )**

Channel **14**

### ELEVATION PATTERN: 120° Azimuth

RMS Gain at Main Lobe

**15.00 ( 11.76 dB )**

Beam Tilt

**2.50 deg**

RMS Gain at Horizontal

**0.90 -( 0.46 dB )**

Frequency

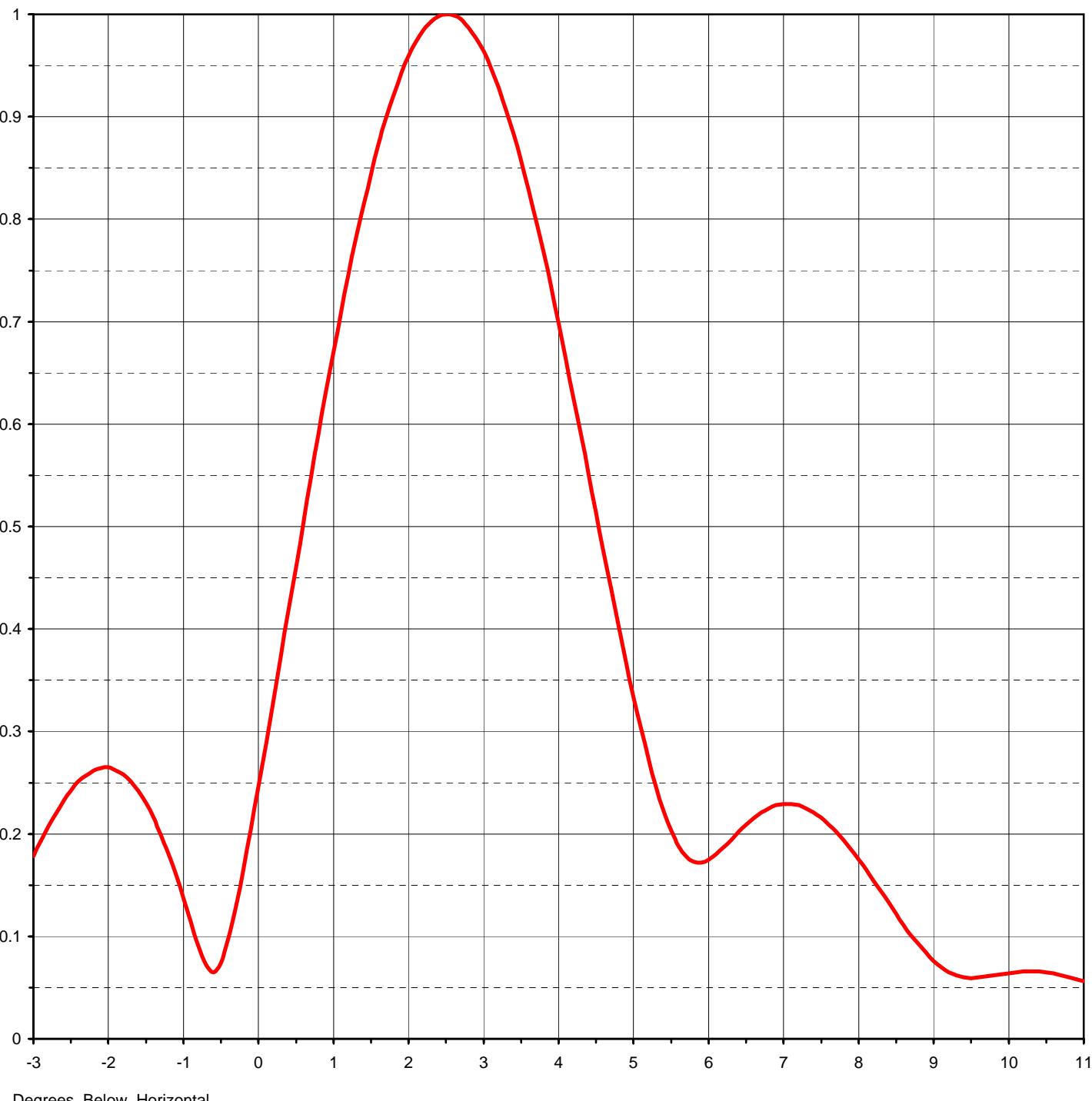
**473.00 MHz**

Calculated / Measured

**Calculated**

Drawing #

**16L150250**



Degrees Below Horizontal



Proposal Number

**DCA-**

Date

**11-May-05**

Call Letters

**WUTV-DT**

Location

**Buffalo, NY**

Customer

Antenna Type

Channel **14****TLP-16E ( C )****ELEVATION PATTERN: 120° Azimuth**

RMS Gain at Main Lobe

**15.00 ( 11.76 dB )**

Beam Tilt

**2.50 deg**

RMS Gain at Horizontal

**0.90 -( 0.46 dB )**

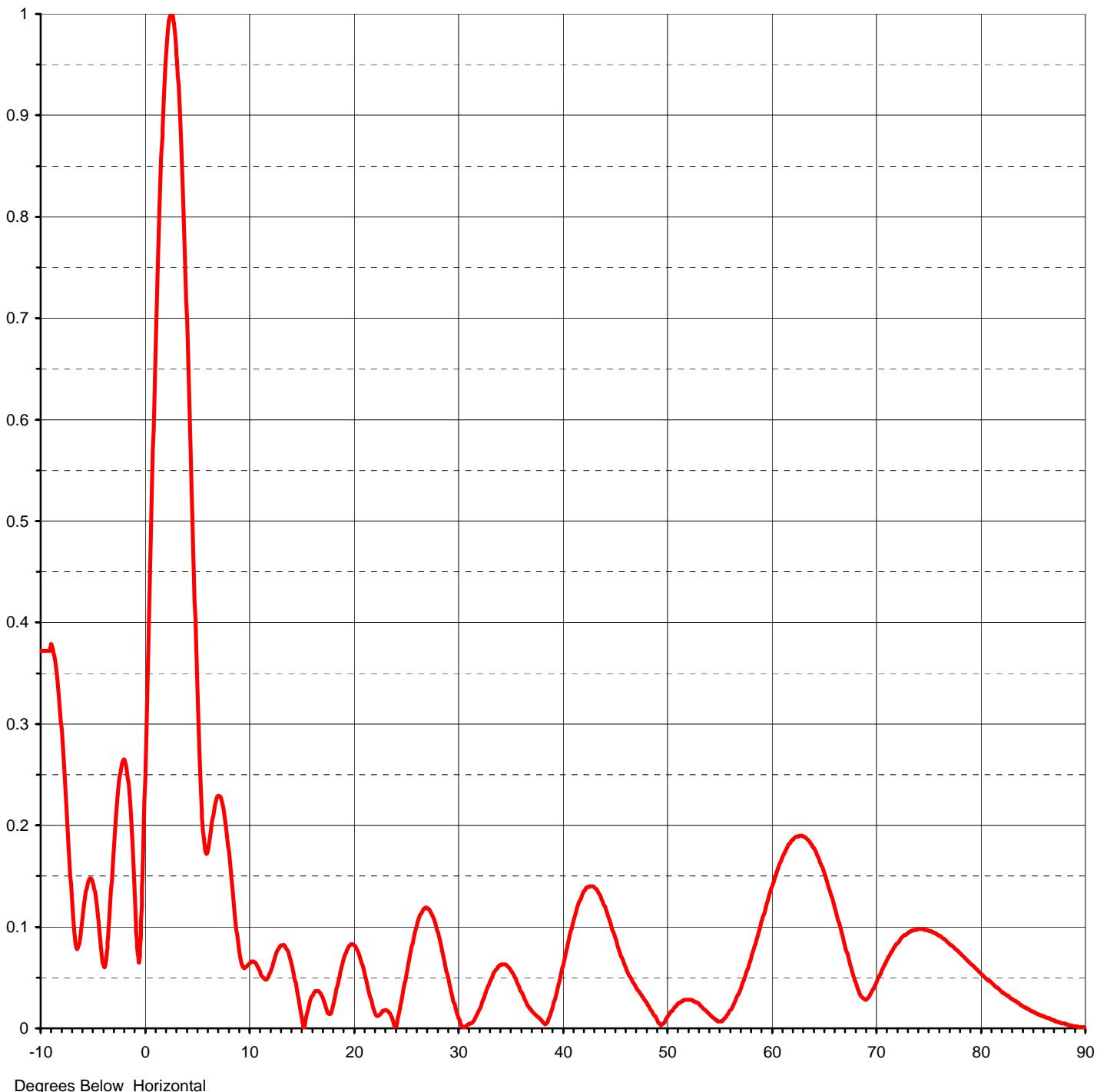
Frequency

**473.00 MHz**

Calculated / Measured

**Calculated**

Drawing #

**16L150250-90**

Degrees Below Horizontal



Proposal Number **DCA-**  
Date **11-May-05**  
Call Letters **WUTV-DT** Channel **14**  
Location **Buffalo, NY**  
Customer  
Antenna Type **TLP-16E ( C )**

## TABULATION OF ELEVATION PATTERN: 120° Azimuth

Elevation Pattern Drawing #: **16L150250-90**

Angle	Field										
-10.0	0.372	2.4	0.998	10.6	0.065	30.5	0.001	51.0	0.023	71.5	0.076
-9.5	0.372	2.6	0.999	10.8	0.062	31.0	0.004	51.5	0.027	72.0	0.084
-9.0	0.379	2.8	0.987	11.0	0.058	31.5	0.007	52.0	0.028	72.5	0.090
-8.5	0.353	3.0	0.964	11.5	0.049	32.0	0.016	52.5	0.027	73.0	0.094
-8.0	0.295	3.2	0.929	12.0	0.053	32.5	0.029	53.0	0.025	73.5	0.097
-7.5	0.213	3.4	0.883	12.5	0.069	33.0	0.043	53.5	0.020	74.0	0.098
-7.0	0.126	3.6	0.829	13.0	0.081	33.5	0.055	54.0	0.015	74.5	0.098
-6.5	0.078	3.8	0.767	13.5	0.081	34.0	0.062	54.5	0.010	75.0	0.096
-6.0	0.108	4.0	0.699	14.0	0.068	34.5	0.063	55.0	0.007	75.5	0.094
-5.5	0.143	4.2	0.626	14.5	0.045	35.0	0.059	55.5	0.009	76.0	0.091
-5.0	0.144	4.4	0.551	15.0	0.016	35.5	0.050	56.0	0.016	76.5	0.088
-4.5	0.109	4.6	0.476	15.5	0.011	36.0	0.038	56.5	0.025	77.0	0.083
-4.0	0.062	4.8	0.403	16.0	0.030	36.5	0.027	57.0	0.037	77.5	0.079
-3.5	0.097	5.0	0.334	16.5	0.037	37.0	0.019	57.5	0.050	78.0	0.074
-3.0	0.178	5.2	0.273	17.0	0.032	37.5	0.013	58.0	0.066	78.5	0.069
-2.8	0.207	5.4	0.223	17.5	0.018	38.0	0.008	58.5	0.083	79.0	0.064
-2.6	0.232	5.6	0.188	18.0	0.019	38.5	0.005	59.0	0.101	79.5	0.059
-2.4	0.251	5.8	0.173	18.5	0.042	39.0	0.017	59.5	0.119	80.0	0.054
-2.2	0.262	6.0	0.175	19.0	0.064	39.5	0.036	60.0	0.136	80.5	0.049
-2.0	0.265	6.2	0.187	19.5	0.079	40.0	0.057	60.5	0.152	81.0	0.045
-1.8	0.258	6.4	0.202	20.0	0.083	40.5	0.080	61.0	0.166	81.5	0.040
-1.6	0.242	6.6	0.215	20.5	0.075	41.0	0.102	61.5	0.177	82.0	0.036
-1.4	0.216	6.8	0.225	21.0	0.058	41.5	0.120	62.0	0.185	82.5	0.032
-1.2	0.181	7.0	0.229	21.5	0.037	42.0	0.133	62.5	0.189	83.0	0.029
-1.0	0.137	7.2	0.228	22.0	0.018	42.5	0.139	63.0	0.190	83.5	0.025
-0.8	0.091	7.4	0.221	22.5	0.013	43.0	0.140	63.5	0.186	84.0	0.022
-0.6	0.065	7.6	0.209	23.0	0.018	43.5	0.133	64.0	0.179	84.5	0.019
-0.4	0.098	7.8	0.194	23.5	0.015	44.0	0.122	64.5	0.167	85.0	0.016
-0.2	0.166	8.0	0.175	24.0	0.002	44.5	0.108	65.0	0.153	85.5	0.014
0.0	0.246	8.2	0.154	24.5	0.020	45.0	0.092	65.5	0.137	86.0	0.012
0.2	0.331	8.4	0.133	25.0	0.047	45.5	0.076	66.0	0.119	86.5	0.010
0.4	0.418	8.6	0.111	25.5	0.074	46.0	0.062	66.5	0.101	87.0	0.008
0.6	0.505	8.8	0.092	26.0	0.098	46.5	0.051	67.0	0.081	87.5	0.006
0.8	0.590	9.0	0.076	26.5	0.113	47.0	0.042	67.5	0.062	88.0	0.005
1.0	0.671	9.2	0.065	27.0	0.119	47.5	0.034	68.0	0.045	88.5	0.003
1.2	0.746	9.4	0.060	27.5	0.113	48.0	0.027	68.5	0.032	89.0	0.002
1.4	0.814	9.6	0.060	28.0	0.099	48.5	0.018	69.0	0.028	89.5	0.001
1.6	0.873	9.8	0.061	28.5	0.078	49.0	0.010	69.5	0.035	90.0	0.000
1.8	0.921	10.0	0.063	29.0	0.054	49.5	0.003	70.0	0.045		
2.0	0.959	10.2	0.065	29.5	0.032	50.0	0.010	70.5	0.057		
2.2	0.985	10.4	0.066	30.0	0.013	50.5	0.017	71.0	0.067		



Proposal Number **DCA-**  
Date **11-May-05**  
Call Letters **WUTV-DT**  
Location **Buffalo, NY**  
Customer  
Antenna Type **TLP-16E ( C )**

Channel **14**

### ELEVATION PATTERN: 155° Azimuth

RMS Gain at Main Lobe

**15.00 ( 11.76 dB )**

Beam Tilt

**2.40 deg**

RMS Gain at Horizontal

**1.20 ( 0.79 dB )**

Frequency

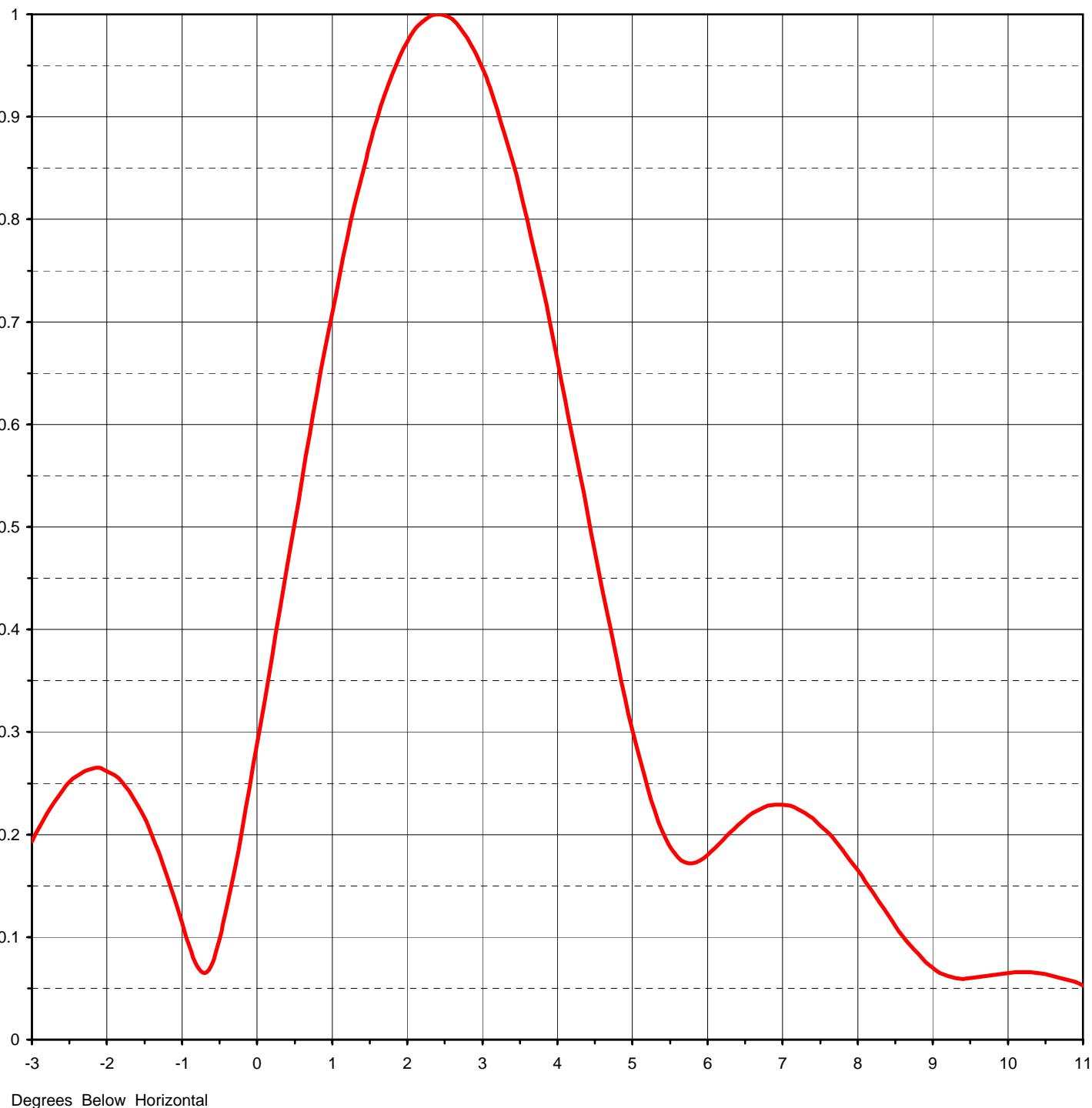
**473.00 MHz**

Calculated / Measured

**Calculated**

Drawing #

**16L150240**



Degrees Below Horizontal



Proposal Number

**DCA-**

Date

**11-May-05**

Call Letters

**WUTV-DT**Channel **14**

Location

**Buffalo, NY**

Customer

Antenna Type

**TLP-16E ( C )****ELEVATION PATTERN: 155° Azimuth**

RMS Gain at Main Lobe

**15.00 ( 11.76 dB )**

Beam Tilt

**2.40 deg**

RMS Gain at Horizontal

**1.20 ( 0.79 dB )**

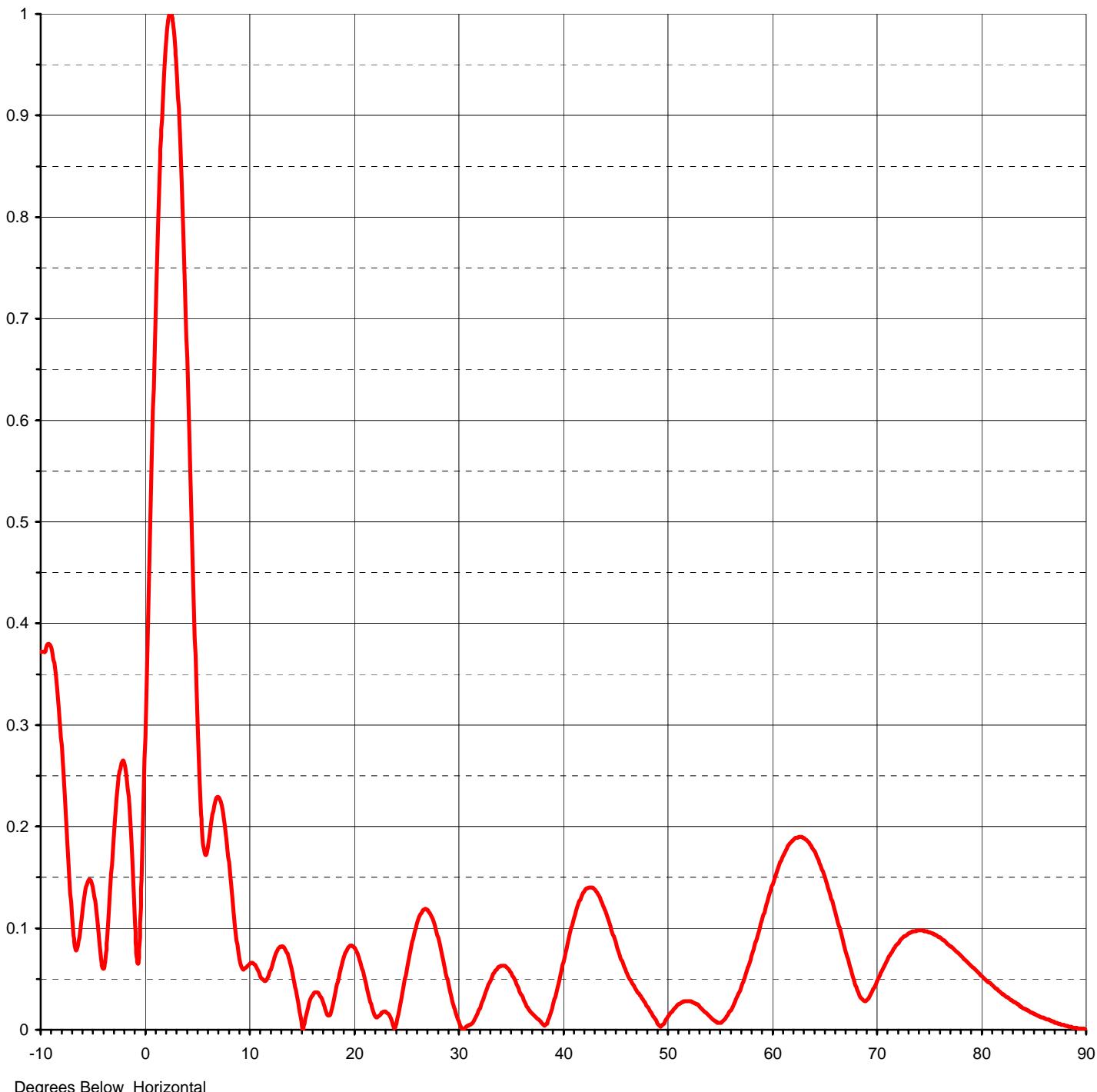
Frequency

**473.00 MHz**

Calculated / Measured

**Calculated**

Drawing #

**16L150240-90**

Degrees Below Horizontal



Proposal Number **DCA-**  
Date **11-May-05**  
Call Letters **WUTV-DT** Channel **14**  
Location **Buffalo, NY**  
Customer  
Antenna Type **TLP-16E ( C )**

## TABULATION OF ELEVATION PATTERN: 155° Azimuth

Elevation Pattern Drawing #: **16L150240-90**

Angle	Field										
-10.0	0.372	2.4	1.000	10.6	0.064	30.5	0.000	51.0	0.024	71.5	0.078
-9.5	0.376	2.6	0.995	10.8	0.060	31.0	0.004	51.5	0.027	72.0	0.085
-9.0	0.377	2.8	0.977	11.0	0.056	31.5	0.008	52.0	0.028	72.5	0.091
-8.5	0.344	3.0	0.947	11.5	0.048	32.0	0.019	52.5	0.027	73.0	0.095
-8.0	0.280	3.2	0.907	12.0	0.056	32.5	0.032	53.0	0.024	73.5	0.097
-7.5	0.195	3.4	0.857	12.5	0.072	33.0	0.046	53.5	0.019	74.0	0.098
-7.0	0.111	3.6	0.799	13.0	0.082	33.5	0.056	54.0	0.014	74.5	0.097
-6.5	0.080	3.8	0.734	13.5	0.079	34.0	0.062	54.5	0.009	75.0	0.096
-6.0	0.117	4.0	0.663	14.0	0.064	34.5	0.063	55.0	0.007	75.5	0.094
-5.5	0.146	4.2	0.589	14.5	0.039	35.0	0.057	55.5	0.010	76.0	0.091
-5.0	0.140	4.4	0.514	15.0	0.011	35.5	0.048	56.0	0.018	76.5	0.087
-4.5	0.099	4.6	0.439	15.5	0.015	36.0	0.036	56.5	0.027	77.0	0.082
-4.0	0.060	4.8	0.368	16.0	0.032	36.5	0.025	57.0	0.039	77.5	0.078
-3.5	0.112	5.0	0.302	16.5	0.037	37.0	0.017	57.5	0.053	78.0	0.073
-3.0	0.193	5.2	0.246	17.0	0.030	37.5	0.012	58.0	0.069	78.5	0.068
-2.8	0.220	5.4	0.203	17.5	0.015	38.0	0.007	58.5	0.087	79.0	0.063
-2.6	0.242	5.6	0.178	18.0	0.023	38.5	0.006	59.0	0.105	79.5	0.058
-2.4	0.257	5.8	0.172	18.5	0.047	39.0	0.020	59.5	0.123	80.0	0.053
-2.2	0.264	6.0	0.180	19.0	0.068	39.5	0.040	60.0	0.140	80.5	0.048
-2.0	0.262	6.2	0.194	19.5	0.081	40.0	0.062	60.5	0.155	81.0	0.044
-1.8	0.251	6.4	0.209	20.0	0.082	40.5	0.085	61.0	0.169	81.5	0.040
-1.6	0.230	6.6	0.221	20.5	0.072	41.0	0.106	61.5	0.179	82.0	0.035
-1.4	0.199	6.8	0.228	21.0	0.054	41.5	0.123	62.0	0.186	82.5	0.032
-1.2	0.160	7.0	0.229	21.5	0.033	42.0	0.135	62.5	0.189	83.0	0.028
-1.0	0.114	7.2	0.225	22.0	0.015	42.5	0.140	63.0	0.189	83.5	0.025
-0.8	0.072	7.4	0.216	22.5	0.014	43.0	0.139	63.5	0.185	84.0	0.021
-0.6	0.074	7.6	0.202	23.0	0.018	43.5	0.132	64.0	0.178	84.5	0.019
-0.4	0.130	7.8	0.185	23.5	0.013	44.0	0.120	64.5	0.164	85.0	0.016
-0.2	0.205	8.0	0.165	24.0	0.002	44.5	0.105	65.0	0.150	85.5	0.013
0.0	0.288	8.2	0.144	24.5	0.025	45.0	0.089	65.5	0.134	86.0	0.011
0.2	0.374	8.4	0.122	25.0	0.053	45.5	0.073	66.0	0.116	86.5	0.009
0.4	0.461	8.6	0.101	25.5	0.079	46.0	0.060	66.5	0.097	87.0	0.007
0.6	0.548	8.8	0.084	26.0	0.101	46.5	0.049	67.0	0.077	87.5	0.006
0.8	0.631	9.0	0.070	26.5	0.115	47.0	0.040	67.5	0.059	88.0	0.004
1.0	0.709	9.2	0.062	27.0	0.118	47.5	0.033	68.0	0.042	88.5	0.003
1.2	0.781	9.4	0.059	27.5	0.111	48.0	0.025	68.5	0.031	89.0	0.002
1.4	0.844	9.6	0.061	28.0	0.095	48.5	0.017	69.0	0.029	89.5	0.001
1.6	0.898	9.8	0.062	28.5	0.073	49.0	0.008	69.5	0.037	90.0	0.000
1.8	0.942	10.0	0.064	29.0	0.050	49.5	0.004	70.0	0.048		
2.0	0.973	10.2	0.066	29.5	0.027	50.0	0.011	70.5	0.059		
2.2	0.993	10.4	0.066	30.0	0.010	50.5	0.018	71.0	0.069		



Proposal Number **DCA-**  
Date **11-May-05**  
Call Letters **WUTV-DT**  
Location **Buffalo, NY**  
Customer  
Antenna Type **TLP-16E ( C )**

Channel **14**

**ELEVATION PATTERN: 300° Azimuth**

RMS Gain at Main Lobe

**15.00 ( 11.76 dB )**

Beam Tilt

**1.50 deg**

RMS Gain at Horizontal

**6.80 ( 8.33 dB )**

Frequency

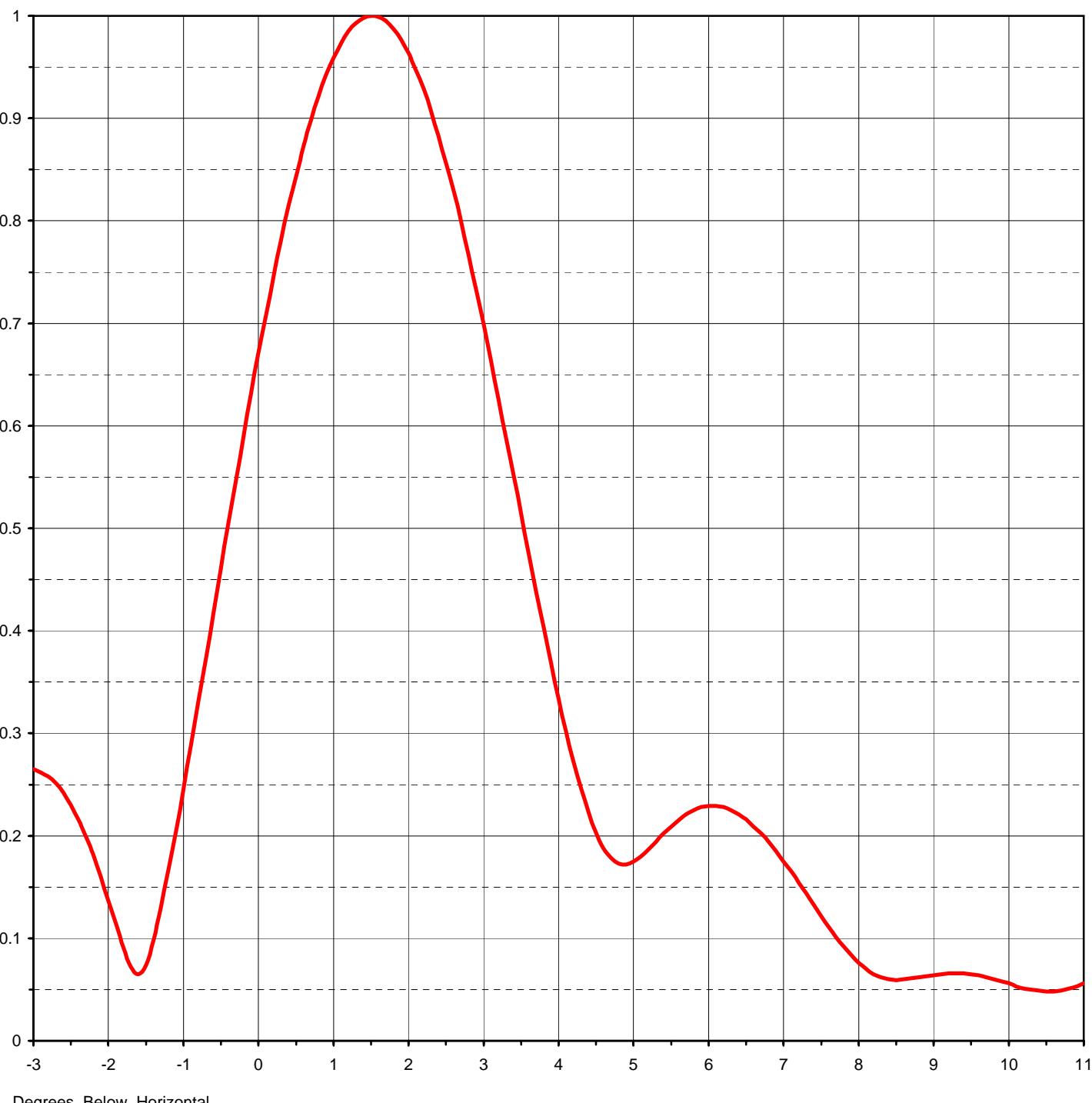
**473.00 MHz**

Calculated / Measured

**Calculated**

Drawing #

**16L150150**



Degrees Below Horizontal

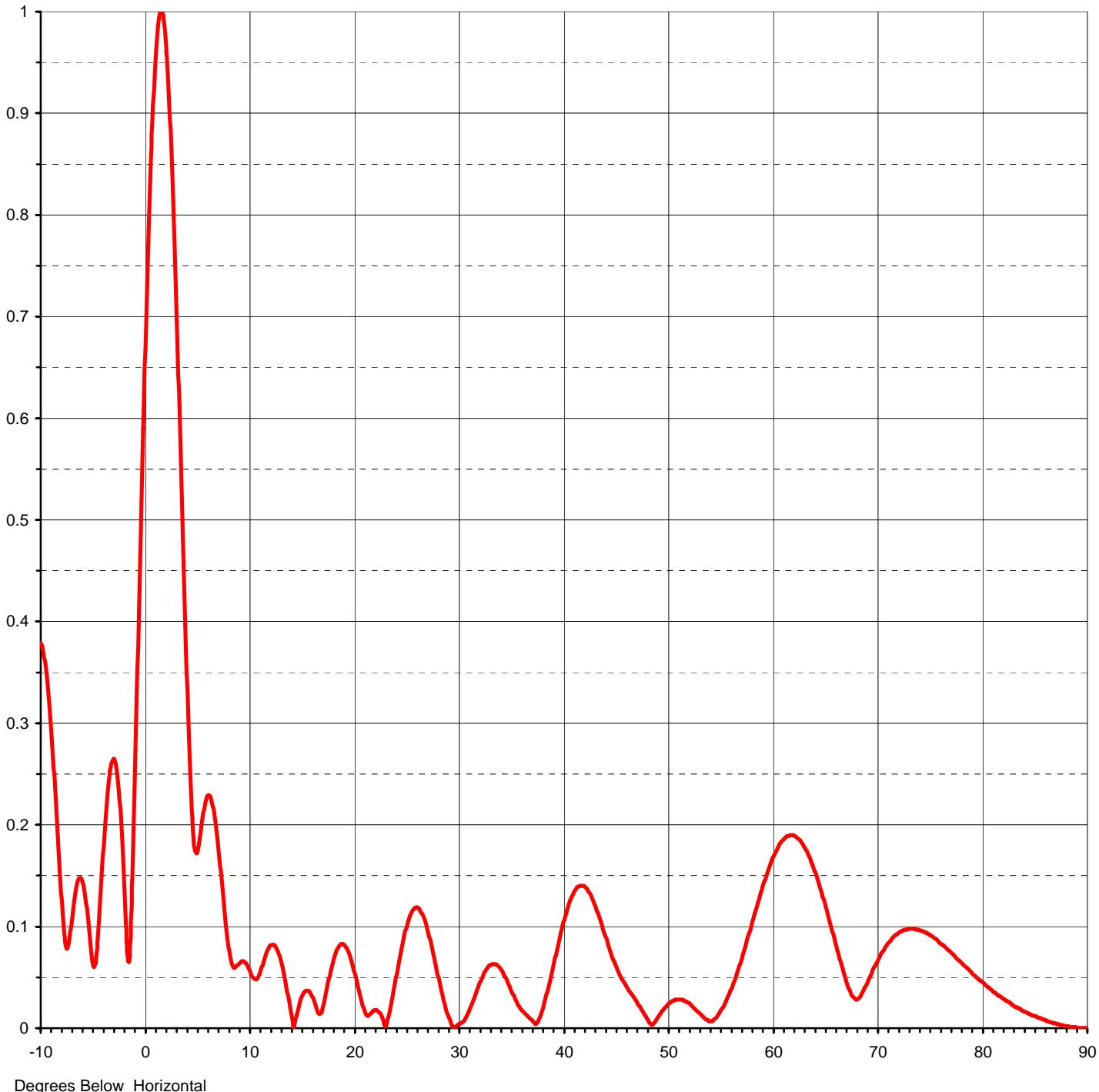


Proposal Number **DCA-**  
Date **11-May-05**  
Call Letters **WUTV-DT**  
Location **Buffalo, NY**  
Customer  
Antenna Type **TLP-16E ( C )**

Channel **14**

**ELEVATION PATTERN: 300° Azimuth**

RMS Gain at Main Lobe **15.00 ( 11.76 dB )** Beam Tilt **1.50 deg**  
RMS Gain at Horizontal **6.80 ( 8.33 dB )** Frequency **473.00 MHz**  
Calculated / Measured **Calculated** Drawing # **16L150150-90**



Degrees Below Horizontal



Proposal Number **DCA-**  
Date **11-May-05**  
Call Letters **WUTV-DT** Channel **14**  
Location **Buffalo, NY**  
Customer  
Antenna Type **TLP-16E ( C )**

**TABULATION OF ELEVATION PATTERN:** **300° Azimuth** **2**

Elevation Pattern Drawing #: **16L150150-90**

Angle	Field										
-10.0	0.379	2.4	0.883	10.6	0.048	30.5	0.007	51.0	0.028	71.5	0.090
-9.5	0.353	2.6	0.829	10.8	0.049	31.0	0.016	51.5	0.027	72.0	0.094
-9.0	0.295	2.8	0.767	11.0	0.053	31.5	0.029	52.0	0.025	72.5	0.097
-8.5	0.213	3.0	0.699	11.5	0.069	32.0	0.043	52.5	0.020	73.0	0.098
-8.0	0.126	3.2	0.626	12.0	0.081	32.5	0.055	53.0	0.015	73.5	0.098
-7.5	0.078	3.4	0.551	12.5	0.081	33.0	0.062	53.5	0.010	74.0	0.096
-7.0	0.108	3.6	0.476	13.0	0.068	33.5	0.063	54.0	0.007	74.5	0.094
-6.5	0.143	3.8	0.403	13.5	0.045	34.0	0.059	54.5	0.009	75.0	0.091
-6.0	0.144	4.0	0.334	14.0	0.016	34.5	0.050	55.0	0.016	75.5	0.088
-5.5	0.109	4.2	0.273	14.5	0.011	35.0	0.038	55.5	0.025	76.0	0.083
-5.0	0.062	4.4	0.223	15.0	0.030	35.5	0.027	56.0	0.037	76.5	0.079
-4.5	0.097	4.6	0.188	15.5	0.037	36.0	0.019	56.5	0.050	77.0	0.074
-4.0	0.178	4.8	0.173	16.0	0.032	36.5	0.013	57.0	0.066	77.5	0.069
-3.5	0.242	5.0	0.175	16.5	0.018	37.0	0.008	57.5	0.083	78.0	0.064
-3.0	0.265	5.2	0.187	17.0	0.019	37.5	0.005	58.0	0.101	78.5	0.059
-2.8	0.258	5.4	0.202	17.5	0.042	38.0	0.017	58.5	0.119	79.0	0.054
-2.6	0.242	5.6	0.215	18.0	0.064	38.5	0.036	59.0	0.136	79.5	0.049
-2.4	0.216	5.8	0.225	18.5	0.079	39.0	0.057	59.5	0.152	80.0	0.045
-2.2	0.181	6.0	0.229	19.0	0.083	39.5	0.080	60.0	0.166	80.5	0.040
-2.0	0.137	6.2	0.228	19.5	0.075	40.0	0.102	60.5	0.177	81.0	0.036
-1.8	0.091	6.4	0.221	20.0	0.058	40.5	0.120	61.0	0.185	81.5	0.032
-1.6	0.065	6.6	0.209	20.5	0.037	41.0	0.133	61.5	0.189	82.0	0.029
-1.4	0.098	6.8	0.194	21.0	0.018	41.5	0.139	62.0	0.190	82.5	0.025
-1.2	0.166	7.0	0.175	21.5	0.013	42.0	0.140	62.5	0.186	83.0	0.022
-1.0	0.246	7.2	0.154	22.0	0.018	42.5	0.133	63.0	0.179	83.5	0.019
-0.8	0.331	7.4	0.133	22.5	0.015	43.0	0.122	63.5	0.169	84.0	0.016
-0.6	0.418	7.6	0.111	23.0	0.002	43.5	0.108	64.0	0.156	84.5	0.014
-0.4	0.505	7.8	0.092	23.5	0.020	44.0	0.092	64.5	0.137	85.0	0.012
-0.2	0.590	8.0	0.076	24.0	0.047	44.5	0.076	65.0	0.119	85.5	0.010
0.0	0.671	8.2	0.065	24.5	0.074	45.0	0.062	65.5	0.101	86.0	0.008
0.2	0.746	8.4	0.060	25.0	0.098	45.5	0.051	66.0	0.081	86.5	0.006
0.4	0.814	8.6	0.060	25.5	0.113	46.0	0.042	66.5	0.062	87.0	0.005
0.6	0.873	8.8	0.062	26.0	0.119	46.5	0.034	67.0	0.045	87.5	0.003
0.8	0.921	9.0	0.064	26.5	0.113	47.0	0.027	67.5	0.032	88.0	0.002
1.0	0.959	9.2	0.066	27.0	0.099	47.5	0.018	68.0	0.028	88.5	0.001
1.2	0.985	9.4	0.066	27.5	0.078	48.0	0.010	68.5	0.035	89.0	0.000
1.4	0.998	9.6	0.064	28.0	0.054	48.5	0.003	69.0	0.045	89.5	0.000
1.6	0.999	9.8	0.062	28.5	0.032	49.0	0.010	69.5	0.057	90.0	0.000
1.8	0.987	10.0	0.058	29.0	0.013	49.5	0.017	70.0	0.067		
2.0	0.964	10.2	0.053	29.5	0.001	50.0	0.023	70.5	0.076		
2.2	0.929	10.4	0.050	30.0	0.004	50.5	0.027	71.0	0.084		



Proposal Number **DCA-**  
Date **11-May-05**  
Call Letters **WUTV-DT**  
Location **Buffalo, NY**  
Customer  
Antenna Type **TLP-16E ( C )**

Channel **14**

### ELEVATION PATTERN: 335° Azimuth

RMS Gain at Main Lobe

**15.00 ( 11.76 dB )**

Beam Tilt

**1.60 deg**

RMS Gain at Horizontal

**6.00 ( 7.78 dB )**

Frequency

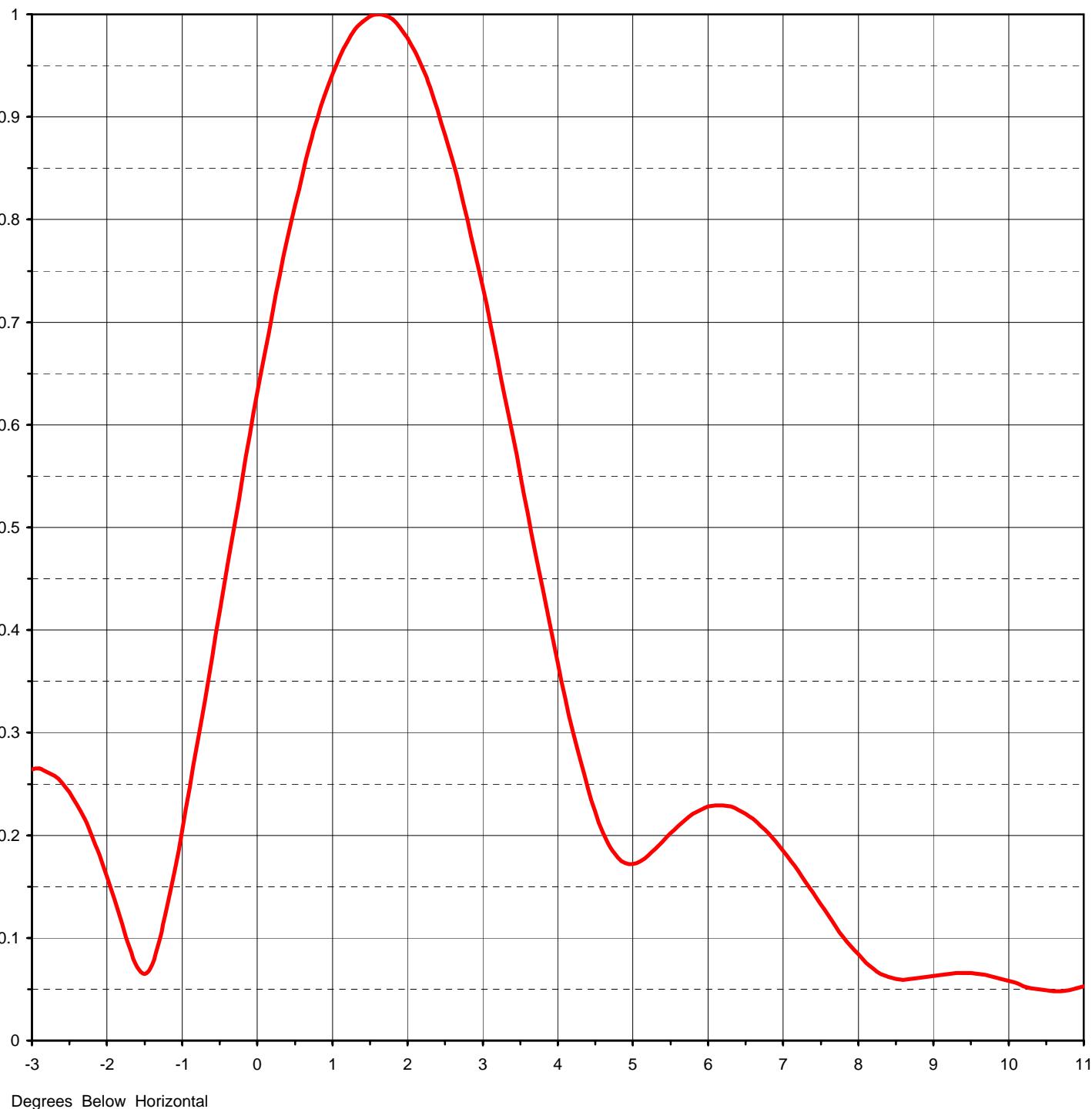
**473.00 MHz**

Calculated / Measured

**Calculated**

Drawing #

**16L150160**





Proposal Number

**DCA-**

Date

**11-May-05**

Call Letters

**WUTV-DT**

Location

**Buffalo, NY**

Customer

Antenna Type

Channel **14****TLP-16E ( C )****ELEVATION PATTERN: 335° Azimuth**

RMS Gain at Main Lobe

**15.00 ( 11.76 dB )**

Beam Tilt

**1.60 deg**

RMS Gain at Horizontal

**6.00 ( 7.78 dB )**

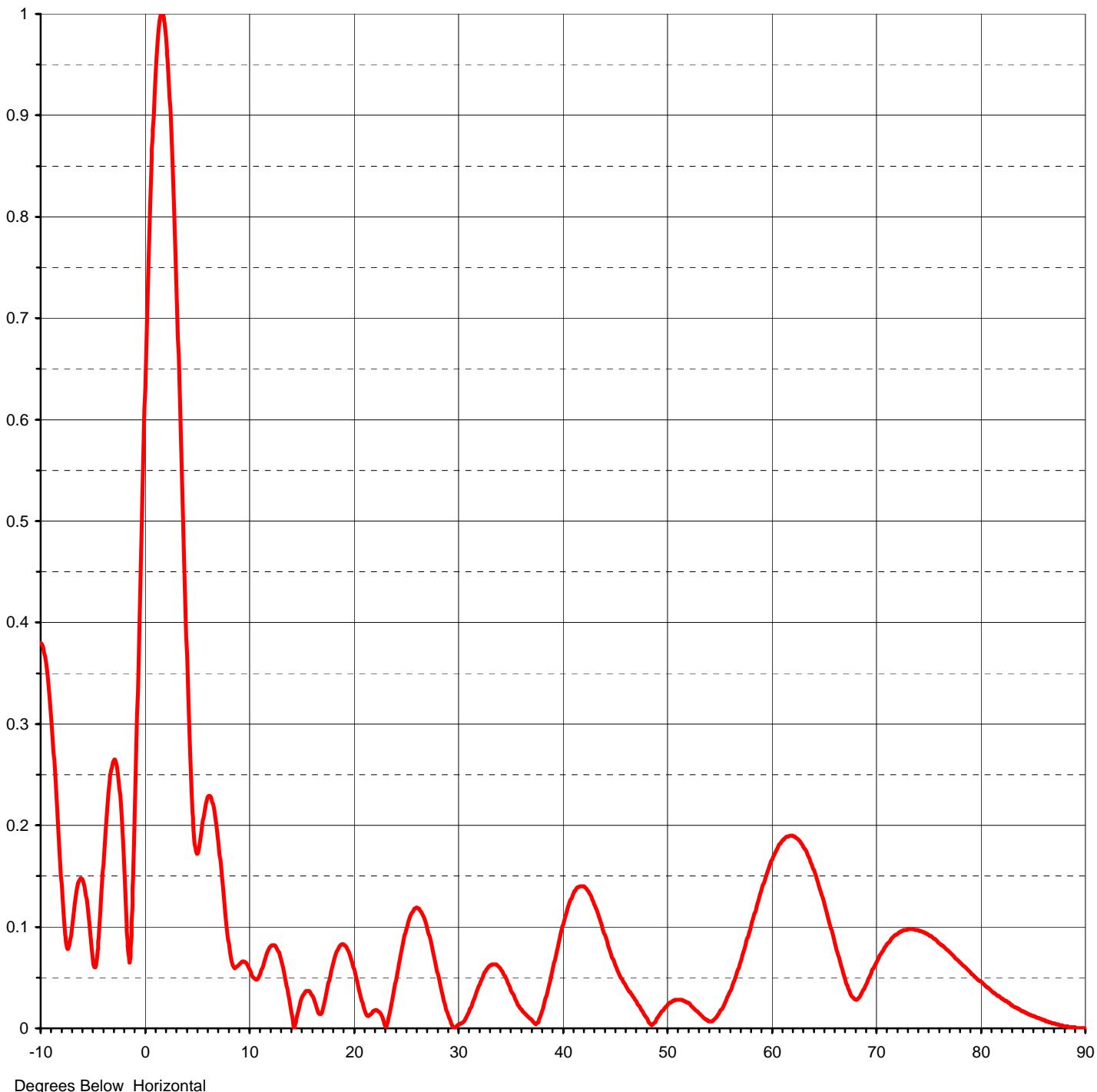
Frequency

**473.00 MHz**

Calculated / Measured

**Calculated**

Drawing #

**16L150160-90**

Degrees Below Horizontal



Proposal Number **DCA-**  
Date **11-May-05**  
Call Letters **WUTV-DT** Channel **14**  
Location **Buffalo, NY**  
Customer  
Antenna Type **TLP-16E ( C )**

## TABULATION OF ELEVATION PATTERN: 335° Azimuth

Elevation Pattern Drawing #: **16L150160-90**

Angle	Field										
-10.0	0.380	2.4	0.907	10.6	0.049	30.5	0.006	51.0	0.028	71.5	0.089
-9.5	0.361	2.6	0.857	10.8	0.048	31.0	0.014	51.5	0.028	72.0	0.093
-9.0	0.308	2.8	0.799	11.0	0.051	31.5	0.027	52.0	0.025	72.5	0.096
-8.5	0.231	3.0	0.734	11.5	0.066	32.0	0.040	52.5	0.021	73.0	0.098
-8.0	0.142	3.2	0.663	12.0	0.079	32.5	0.053	53.0	0.016	73.5	0.098
-7.5	0.081	3.4	0.589	12.5	0.082	33.0	0.061	53.5	0.011	74.0	0.097
-7.0	0.100	3.6	0.514	13.0	0.071	33.5	0.063	54.0	0.007	74.5	0.095
-6.5	0.138	3.8	0.439	13.5	0.050	34.0	0.060	54.5	0.008	75.0	0.092
-6.0	0.147	4.0	0.368	14.0	0.022	34.5	0.052	55.0	0.014	75.5	0.088
-5.5	0.118	4.2	0.302	14.5	0.006	35.0	0.041	55.5	0.023	76.0	0.084
-5.0	0.069	4.4	0.246	15.0	0.027	35.5	0.029	56.0	0.034	76.5	0.080
-4.5	0.082	4.6	0.203	15.5	0.037	36.0	0.020	56.5	0.047	77.0	0.075
-4.0	0.162	4.8	0.178	16.0	0.034	36.5	0.014	57.0	0.063	77.5	0.070
-3.5	0.232	5.0	0.172	16.5	0.021	37.0	0.009	57.5	0.079	78.0	0.065
-3.0	0.264	5.2	0.180	17.0	0.015	37.5	0.004	58.0	0.097	78.5	0.060
-2.8	0.262	5.4	0.194	17.5	0.037	38.0	0.014	58.5	0.115	79.0	0.055
-2.6	0.251	5.6	0.209	18.0	0.060	38.5	0.032	59.0	0.133	79.5	0.050
-2.4	0.230	5.8	0.221	18.5	0.077	39.0	0.053	59.5	0.149	80.0	0.046
-2.2	0.199	6.0	0.228	19.0	0.083	39.5	0.076	60.0	0.164	80.5	0.041
-2.0	0.160	6.2	0.229	19.5	0.077	40.0	0.098	60.5	0.175	81.0	0.037
-1.8	0.114	6.4	0.225	20.0	0.062	40.5	0.117	61.0	0.184	81.5	0.033
-1.6	0.072	6.6	0.216	20.5	0.041	41.0	0.131	61.5	0.189	82.0	0.029
-1.4	0.074	6.8	0.202	21.0	0.021	41.5	0.139	62.0	0.190	82.5	0.026
-1.2	0.130	7.0	0.185	21.5	0.012	42.0	0.140	62.5	0.187	83.0	0.023
-1.0	0.205	7.2	0.165	22.0	0.017	42.5	0.135	63.0	0.181	83.5	0.020
-0.8	0.288	7.4	0.144	22.5	0.016	43.0	0.125	63.5	0.171	84.0	0.017
-0.6	0.374	7.6	0.122	23.0	0.005	43.5	0.111	64.0	0.159	84.5	0.014
-0.4	0.461	7.8	0.101	23.5	0.015	44.0	0.095	64.5	0.140	85.0	0.012
-0.2	0.548	8.0	0.084	24.0	0.041	44.5	0.079	65.0	0.123	85.5	0.010
0.0	0.631	8.2	0.070	24.5	0.069	45.0	0.065	65.5	0.104	86.0	0.008
0.2	0.709	8.4	0.062	25.0	0.094	45.5	0.053	66.0	0.085	86.5	0.006
0.4	0.781	8.6	0.059	25.5	0.111	46.0	0.044	66.5	0.066	87.0	0.005
0.6	0.844	8.8	0.061	26.0	0.118	46.5	0.036	67.0	0.049	87.5	0.003
0.8	0.898	9.0	0.063	26.5	0.115	47.0	0.028	67.5	0.034	88.0	0.002
1.0	0.942	9.2	0.065	27.0	0.103	47.5	0.020	68.0	0.028	88.5	0.001
1.2	0.973	9.4	0.066	27.5	0.083	48.0	0.012	68.5	0.033	89.0	0.001
1.4	0.993	9.6	0.065	28.0	0.059	48.5	0.004	69.0	0.043	89.5	0.000
1.6	1.000	9.8	0.064	28.5	0.036	49.0	0.008	69.5	0.054	90.0	0.000
1.8	0.995	10.0	0.060	29.0	0.016	49.5	0.016	70.0	0.065		
2.0	0.977	10.2	0.056	29.5	0.003	50.0	0.022	70.5	0.075		
2.2	0.947	10.4	0.051	30.0	0.003	50.5	0.026	71.0	0.083		

## APPENDIX C

**SUMMARY OF RADIOFREQUENCY  
RADIATION STUDY**  
**WUTV-DT, BUFFALO, NEW YORK**  
**CHANNEL 14, 1000 kW ERP, 299.5 m HAAT**  
**JUNE, 2005**

<u>CALL</u>	<u>SERVICE</u>	<u>CHANNEL</u>	<u>FREQUENCY</u>	<u>POLARIZATION</u>	<u>ANTENNA HEIGHT **</u>	<u>ERP (kW)</u>	<u>VERT.</u>	<u>PREDICTED POWER DENSITY (mW/cm<sup>2</sup>)</u>	<u>UNCONTROLLED LIMIT (mW/cm<sup>2</sup>)</u>	<u>FCC PERCENT OF UNCONTROLLED LIMIT</u>
							<u>RELATIVE FIELD FACTOR</u>			
WUTV(TV)	TV	29	563	H	327	3980.000	0.300	0.05596	0.375	14.91%
WUTV-DT	DT	14	473	H	298	1000.000	0.300	0.03385	0.315	10.73%
WNYO-DT	DT	34	593	H	286	175.000	0.300	0.00643	0.395	1.63%
WBNF-CA	TV	15	479	H	168	27.000	0.300	0.00144	0.319	0.45%
W36CD	TV	21	515	H	149	2.000	0.300	0.00014	0.343	0.04%
<b>TOTAL PERCENTAGE OF ANSI VALUE=</b>										<b>27.76%</b>

\*\* The antenna heights indicated above are 2 meters less than the actual antenna heights  
so that the predicted power densities consider the 2 meter human height allowance.

This evaluation includes facilities collocated at the site, and facilities located within 315 meters